BLM LIBRARY
88045379

FINDING OF NO SIGNIFICANT IMPACT
AND
DECISION RECORD

INTEGRATED WILDLIFE DAMAGE MANAGEMENT PROGRAM
1994-1998
ELKO DISTRICT - BUREAU OF LAND MANAGEMENT

BLM/EK/PL-94/015
File:6830

SK
421
.E45
1995

BLM LIBRARY
RS 150A BLDG. 50
DENVER FEDERAL CENTER
P.O. BOX 25047
DENVER, CO 80225

ID88045379

SK
421
.E45
1995

FINDING OF NO SIGNIFICANT IMPACT AND DECISION RECORD

INTEGRATED WILDLIFE DAMAGE MANAGEMENT PROGRAM
1994-1998
ELKO DISTRICT - BUREAU OF LAND MANAGEMENT

BLM/EK/PL-94/015
File:6830

I. REFERENCE

On March 29 1994, Environmental Assessment BLM/EK/PL-94/015 with a decision record addressing a proposed Integrated Wildlife Damage Management Program, 1994-1998, to be conducted by the U.S. Department of Agriculture's, Animal and Plant Health Inspection Service's, Animal Damage Control (ADC) on public lands administered by the Elko District, Bureau of Land Management was sent to 76 individuals, agencies, grazing permittees, and/or organizations.

On April 25, 1994, the Nevada BLM State Director rescinded the original decision record and opened a formal public review period through June 3, 1994. A letter was sent to the original 76 individuals, agencies, livestock operators, and/or organizations notifying them of the rescission and new public review period. On April 29, 1994, a notification was made to 199 other individuals, agencies, livestock operators, and/or organizations, that the environmental assessment (EA) was available for public review, and a copy could be obtained upon request. On May 2, 1994, a news release was issued to 27 newspapers and/or radio stations in the local area and region to notify the public of the availability of the EA and the comment period. From the written notifications and news releases, 22 requests were received, for which a copy of the EA was sent.

This Finding of No Significant Impact/Decision Record is the result from revision of the EA and review of public comment.

BLM LIBRARY
RS 150A BLDG. 50
DENVER FEDERAL CENTER
P.O. BOX 25047
DENVER, CO 80225

II. SUMMARY OF PROPOSED ACTION AND ALTERNATIVES

A. Proposed Action - Administratively approve, with or without additional restriction, the work plan for 1994-1998 as submitted by ADC, on selected public lands in the Elko District. The proposed program emphasizes an integrated wildlife damage management (IWDM) approach to control depredating animals. A variety of lethal control methods are proposed and would be applied as either a corrective or preventive strategy. Management actions would be directed towards localized populations(s) and/or individual coyotes, ravens, offending mountain lions, and offending bobcats.

B. No Action Alternative - Do not authorize any predator control activities by ADC on public lands administered by Elko District-BLM.

C. Restricted Management Alternative - Authorize ADC to pursue an integrated predator management program which would utilize a mixture of local population management, animal husbandry, and behavior modification to avoid livestock losses by predators either from or on public lands. Preventive and corrective lethal control may be allowed based on demonstrated need and threats of future damage following the submission of losses to ADC. Lethal control may be granted following a review of the actions taken by livestock operators to actively demonstrate use of an integrated predator management program. Lethal preventive control for sheep would be limited to two weeks prior to livestock turnout and would be limited to within 2 miles of historic and confirmed loss areas or in response to the threat of continued damage. Aerial gunning would be allowed only as a corrective action for cattle after losses are reported during calving season.

D. Expanded Predator Management - Preventive and corrective actions of a lethal and nonlethal nature would be aggressively pursued by ADC yearlong.

E. Corrective Control Alternative - After depredation occurs, allow lethal control by ADC to be conducted using leghold traps, aerial gunning, shooting, denning, snares, and trained dogs as appropriate, in primary control areas (domestic sheep allotments and trailing areas). Preventive control and use of M-44s would not be allowed.

F. No Lethal Control Alternative - Eliminate all lethal IWDM control activities by ADC on the Elko District-BLM. The district and ADC would encourage livestock operators to continue their use of guard dogs, herders, and other nonlethal methods. ADC would provide only technical assistance on public lands.

Three alternatives were considered but dropped from detailed analysis.

Compensation for Losses Alternative - Compensate livestock losses suffered by operators through direct payments based on estimated or documented damage. Analysis of this option was not explored because no legal mechanism is in place to implement such an alternative or permit this type of payment. Using compensation would require federal or state legislation and funding, which is unavailable.

Threshold Loss Scenario Alternative - Nonlethal controls of all sorts could be pursued prior to the use of lethal control methods. Lethal control could be allowed after a threshold of livestock loss was sustained by producers. This alternative was not pursued because of the relative nature of thresholds, the range of values of individual animals, the amount of losses that could be sustained between the onset of a threshold and control of the offending animals, the variety of kinds or size of livestock, and the ability of operators to sustain loss.

Mountain Lion Sport Harvest Alternative - This alternative would require institution of a sport harvest system for depredating mountain lions. The legal framework for such a system is not in place, thus no detailed analysis was made.

III. FINDING OF NO SIGNIFICANT IMPACT

I have reviewed Environmental Assessment BLM/EK/PL-94/015 prepared to analyze the environmental effects of integrated wildlife damage management on public lands in the Elko District-BLM. I have determined the approval of an integrated wildlife damage management program would not significantly affect the quality of the human environment. Therefore, in accordance with Section 102(2)(C) of the National Environmental Policy Act, the preparation of an environmental impact statement is not required.

IV. DECISION

It is my decision to select the Restricted Management Alternative described in EA BLM/EK/PL-94/015, and allow ADC to conduct an integrated wildlife damage management program on public land within the Elko District-BLM. In this program, livestock operators and ADC will utilize a mixture of animal husbandry, behavior modification, and local population management practices to diminish livestock losses by predators either from or on public lands. Preventive and corrective actions of a lethal or nonlethal nature for certain classes of livestock are allowed. The program will be directed at offending individuals or local populations of predators, primarily coyotes, on public land.

In accordance with BLM Washington Office Instruction Memorandum No. 93-107, this decision covers IWDM activities for a five year period following the date of the Nevada BLM State Director's signature. This extends beyond 1998 this decision, as compared to the initial proposed plan which covered a five year period of 1994-1998. An earlier revision of the environmental analysis associated with this decision and subsequent new plan, will be completed before the end of five years, if ADC presents a program to BLM with substantially different procedures that could result in impacts not analyzed in the environmental analysis accompanying this decision record.

Predator control must be requested by livestock operators through approved ADC procedures and comply with all elements required in BLM Manual 6830. BLM reserves the administrative authority to accept or deny proposals presented by ADC for the public lands. Integrated wildlife damage management actions allowed under this decision on Elko District-BLM, include the following:

Animal Husbandry

* To the extent practical, avoiding areas with known high potential for livestock death or injury from predators.

* Removing or burying livestock carcasses whenever possible to avoid attracting coyotes.

* Timing calving or lambing to coincide with the spring emergence of native prey such as ground squirrels, which are food sources for coyotes, that can reduce predator reliance upon domestic livestock for food.

* Calving or lambing within fenced quarters on private land, where there is good opportunity to practice quality herd supervision by livestock operators.

* Using employees and/or herders to supervise calving or lambing on public land, in order to facilitate removal of offending coyotes.

* Periodically culling livestock herds so that healthy, disease-free stock are being grazed on or near the public lands.

* Locating sheep herder camp within 200 yards of bands being supervised.

* Bedding sheep for no more than two nights in the same location.

* Using stock dogs or guarding dogs to discourage coyote predation.
* Using llamas or burros in livestock herds to discourage coyote predation.

Behavior Modification
* Using strobe lights, sirens, radios, pyrotechnics, and all other forms of noise and disturbance makers, which temporarily frighten coyotes and discourage predation situations.

* Using any other types of actions not listed, which meet the intent of nonlethal control measures and have been proven to be effective by research or local practical application, could be approved by BLM on a case-by-case basis.

Population Management
* ADC lethal control methodologies authorized, used singly or in combination, may include leghold traps, head snares, foot snares, denning, calling/shooting, hunting dogs, and aerial gunning. The prescription(s) shall be designed using the judgment and experience of ADC field specialists and reviewed by BLM at an annual meeting.

Sheep Producer Standards
* Authorization of aerial gunning for preventive control on sheep allotments will be based on the history of confirmed and reported damage, and sheep operator demonstrated use of proven nonlethal control measures as advised by ADC.

* Preventive aerial gunning for sheep operators, prior to arrival on the public lands, is limited to two weeks prior to turnout. No aerial gunning is allowed after sheep leave the public land.

* Preventive aerial gunning for sheep protection on the public lands is allowed within 2 miles of confirmed livestock kill areas only.

* Where persistent sheep losses are occurring and operators fail to utilize ADC recommended nonlethal methods, lethal control activities on public land will not be authorized. Lethal control may be conducted after the operator implements recommended nonlethal techniques, and ADC determines that additional methods are required to further reduce losses.

Cattle Producer Standards

* Aerial preventive gunning to protect cattle will not be allowed. Corrective lethal methods, if required, may be authorized.

Additional Conditions

* Lethal control by ADC is not authorized in wilderness study areas (WSAs) on Elko District-BLM. Approval for lethal control may be granted at the discretion of the Nevada BLM State Director for highly unusual or emergency situations on a case-by-case basis. Any action proposed within a WSA, will be conducted in accordance with BLM WSA Interim Management Policy (IMP) for Lands Under Wilderness Review (H-8550-1). Actions within all WSAs will meet the non-impairment criteria as stated in the IMP. Any lethal control actions by ADC in WSAs, including vehicular traffic off of existing roads and trails, require prior approval by BLM.

* Extension of the 2 mile preventive kill zone may be authorized by BLM on a case-by-case basis by the District Manager or other BLM authorized officer after ADC demonstrates, with verified kill evidence, that livestock loss continues.

* M-44 use is subject to approval by the Nevada BLM State Director on a case-by-case basis. M-44s are not authorized as standard operating procedures on public land administered by Elko District-BLM. M-44 use may be requested in very limited situations where other control techniques have been exhausted in attempts to control predation situations and verified losses continue to occur.

*The program may be directed at offending individuals or local populations of predators, primarily coyotes, on public land. Management actions directed at mountain lion and bobcat may be conducted on an emergency basis after the confirmation of damage or in circumstances threatening public safety. BLM authorization is required prior to each control effort directed at mountain lions or bobcats. The total number of mountain lions or bobcats killed by date, method, and by BLM grazing allotment township, range, and section will be provided by ADC to BLM at an annual meeting.

*Except for potential use of M-44's, this alternative does not permit the use of any chemical toxicants on public land. Chemical toxicants are not be permitted in WSAs under any circumstance.

*ADC aerial operations below 500 feet shall be conducted to avoid wild horses between March 1 and June 30, unless authorized by the District Manager.

*ADC shall notify the District Manager or designated agent immediately prior to any aerial control work.

*ADC shall provide livestock operators with technical assistance and information concerning lethal and nonlethal control methods.

*In areas where the take of nontarget species increases beyond levels NDOW/ADC/BLM believes to be acceptable to the maintenance of those populations, every effort will be made to avoid the further take of the species of concern.

*All leghold traps, head snares, foot snares, and similar devices used by ADC on public lands administered by Elko District-BLM, shall be checked at least every 96 hours.

*ADC's aerial operations shall be altered when any large raptor nest is encountered on public land, in order to avoid collisions or harassment. ADC technicians must keep a ¼ mile buffer between active nest sites and aircraft used for control work, as soon as raptors are encountered.

*There may be circumstances in which ADC field technicians cannot get to operators for the purpose of loss confirmation. This is a distinct possibility due to the limited ADC workforce. In these cases, documentation of confirmed loss (necropsy) is allowed by a licensed veterinarian.

*All control programs will be conducted within new and existing Animal Damage Control (ADC) policies, BLM Manual 6830 (8/88), Nevada State ADC-BLM MOU, and all applicable state/federal laws.

*Signs shall be posted to provide adequate warning of all areas where control devices are in use. Enough signs are to be installed at commonly used access points to ensure public safety.

*The BLM District Manager may, at any time, restrict or modify IWDM activities on the public lands for multiple use management or public safety reasons.

*Lethal control activities are limited to the primary control areas marked in green on Map 1 of the IWDM plan, except as provided under "Emergency Situations".

Public Safety, No Control Zones

No traps, snares, or toxicants are allowed within the public safety or no control areas shown in red on maps within the IWDM plan and/or specified below, unless needed for public health or safety.

a. Within three miles of any community, including unincorporated towns such as Spring Creek, Ryndon, and Lucky Nugget.
b. Within one-quarter mile of any state or federal highway.
c. Within one mile of all developed recreation sites, major mines, and isolated residences.
d. Within one-half mile of the firewood cutting areas identified on Maps 2A-L.
e. Within the South Fork of the Owyhee River Canyonlands area, from the Gauging Station in T. 45 N., R. 49 E., Sec. 16 MDM, north to the Idaho/Nevada border, during the months April through June.

Endangered Species Act Compliance for Northern Bald Eagle

In order to be exempt from the prohibitions of Section 9 of the Endangered Species Act for the northern bald eagle, the following terms and conditions are part of this decision for the Elko District-BLM:

1. ADC personnel shall contact either the Nevada Division of Wildlife (NDOW) or the Reno Field Office of the United States Fish and Wildlife Service (USFWS) to determine roost locations.

2. The USFWS Reno Field Office shall be notified within 5 days of the finding of any dead or injured bald eagle. Cause of death, injury, or illness, if known, shall be provided.

3. Leghold traps (except those used to trap mountain lions) shall be placed a minimum of 30 feet from aboveground bait sets.

Emergency Control Provisions

Emergency actions are allowed as defined in BLM Manual 6830, Animal Damage Control. This is for unusual situations, where there may be a need to depart from stipulations identified in this decision. A conference with BLM may be initiated by ADC in person or by phone, so BLM may analyze the loss and risk situation, and proceed accordingly with acceptance or denial of the emergency proposal recommended by ADC. Written documentation of the ADC recommendation and BLM approval, if granted, will be completed and included as addendum to the IWDM plan.

Monitoring

The following specific information about the previous year's IWDM program will be provided by ADC to BLM by early December each year under this decision:

1. The total number of livestock per class, age, and location (by BLM grazing allotment and by canyon, creek, other landmark, or by township, range, and section) lost as a result of predation. Whether these were verified by ADC or reported (suspected) losses to predation shall be identified.

2. The total number and species of predators killed by date, method, and location (by BLM grazing allotment and by canyon, creek, other landmark, or by township, range, and section).

3. The total number of predators killed, by species, as a consequence of preventive or corrective action.

4. The total number of nontarget animals taken by date, method, species and location (by BLM grazing allotment and by canyon, creek, other landmark, or by township, range, and section). Whether or not the animal was released alive and capable of self maintenance, died, or had to be euthanized as a result of injury shall be identified.

5. The steps taken by each operator to pursue animal husbandry and behavior modification actions which limit the need for lethal controls on the public lands. No lethal control would be allowed on public land until this data is provided by operators to ADC. ADC would be required, in turn, to provide the information to BLM before formulating the annual control agreement, or responding to individual requests where this information has not already been supplied by operators.

VI. DECISION RATIONALE

The selected action is necessary to periodically reduce livestock losses to local populations of predators, primarily coyotes, in the Elko District. Predators can have adverse financial impacts to livestock operators influenced by or dependent on the public lands.

Sufficient livestock losses have been documented in ADC records for me to conclude that an integrated wildlife damage management program is justified on public land. Furthermore, state and federal laws provide the legal mechanisms for both livestock operators and the Nevada Division of Wildlife to pursue predator control for their purposes.

Potentially hazardous control methods will be applied in accordance with applicable state and federal laws and carried out under ADC's standard operating procedures identified in the 1994 final environmental impact statement addressing the ADC program.

Special protection areas, safety zones, and restrictions in special management areas are expected to address the need for protection of domestic animals and recreational users visiting the public lands. The coyote, identified as the primary target species addressed in the subject environmental analysis, is common and widespread within the Elko District-BLM on private and public lands. Based on a coyote population model which was constructed using published information, the Elko District-BLM supports an annual population of approximately 26,953 coyotes prior to any human or natural mortality. ADC take has accounted for approximately 4.4% of this population annually for the last five years. Trapping and sport harvest take is estimated at 1.9 % annually. Together (6.3%) ADC and sport harvest take is far below the take level indicated by researchers which would be necessary to eliminate coyotes from an area (75% of the population taken annually over fifty years).

The cumulative impacts of known coyote harvest from ADC's operations and other people or organizations including hunters, trappers, landowners, vehicle collisions, and other human induced mortality is less than 12.6% of the potential population each year. This assumes that landowner harvest or other coyote mortality, which has not been recorded methodically by any person or organization, is equal to the total amount of take reported by ADC combined with trapper take reported through NDOW records. Based on these data, the coyote is not jeopardized as a consequence of the combined effects of harvest within the Elko District.

The Elko District recognizes the need for reasonable levels of professional, integrated predator control as practiced by ADC. In the absence of a federal predator control program, private individuals may feel pressed to take actions that in the short and long-term could result in more inhumane and nonselective destruction of wildlife.

ADC technicians do not use sight baits in conjunction with steel jaw traps which reduces the likelihood of trapping northern bald eagles that winter within the district. The terms and conditions for deployment of leghold traps follow the advice of the USFWS as provided through informal consultation. According to the USFWS, the implementation of an integrated wildlife damage management program would not jeopardize continued existence of northern bald eagles when carried out under terms and conditions identified within this decision.

IWDM actions, presently and anticipated, in the district are resulting in nontarget animal captures and deaths at a level which is not known to have more than local, temporary, adverse effects.

Other Comments

The intent of this decision is met, when livestock operators and ADC actively demonstrate the use of animal husbandry and behavior modification actions known to reduce predation on livestock in conjunction with lethal means. Authorization to allow ADC to conduct integrated wildlife damage management on public land requires that reasonable steps be taken by operators to help offset and avoid losses due to predation. Predator control on public land shall become the burden of individual operators who do not make this effort. BLM will apply a test of reasonableness in reviewing annual control programs presented by ADC as well as the circumstances of operators.

Judgment as to whether or not the IWDM program is likely to meet the stated goals of livestock protection or whether it is cost effective is a matter for ADC and Congress to defend to the public's satisfaction, not BLM. IWDM as conducted by ADC is not a BLM program. BLM determines if the program planned by ADC would place predators or other animals in jeopardy as a result of their actions and, when necessary, places reasonable mitigating measures to prevent unnecessary damage to public land resources.

IWDM on public land is a controversial issue. The decision and environmental analysis show that it will be prudent for BLM to make a closer examination of reported loss data, circumstances, and rationale for this program, on an individual operator basis. Requiring ADC to supply detailed information about take of various animals permits BLM to have an accurate understanding of what impacts IWDM has on public land resources.

BLM staff will be conducting some periodic field checks to determine compliance with mitigations and standards identified in the EA and this decision. Ultimately, however, BLM believes that the real responsibility for thoughtful use of IWDM services rests upon the industry using federal ADC assistance.

BLM recognizes the value of sound animal husbandry methods as a means to help limit coyote depredations. This is basic ADC and BLM policy worthy of being restated in this decision. Responsible producers in the analysis area, who recognize their role as stewards of the public lands, know this to be true. IWDM on public land requires that reasonable steps be taken by operators to share the responsibility of controlling livestock loss to predators.

The Bureau is not requiring that all livestock losses be verified by ADC or a veterinarian before lethal control measures are authorized. However this decision does require that some losses be documented for each operator where lethal control is practiced on public land. BLM encourages ADC and operators to document as many losses to predation or other causes as possible, to provide quality information that will facilitate ongoing evaluations of IWDM.

Preventive predator control measures for sheep are allowed on the basis that such action does not threaten the existence of target or nontarget wildlife populations in the analysis area. Preventive control for cattle is not necessary to keep losses reasonable.

I believe the analysis shows that a responsible application of the integrated wildlife damage management approach, which is based on demonstrated need through verified losses each year, is flexible in its application, and most likely to meet mixed public needs and concerns documented in the environmental analysis.

Right of Appeal

This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4 and the enclosed Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition, pursuant to the regulation 43 CFR 4.21 (58 Federal Register 4939, January 19, 1993) for a stay of the effectiveness of this decision during the time that your appeal is being reviewed by the Board, the petition for the stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below.

Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

(1) The relative harm to the parties if the stay is granted or denied,

(2) The likelihood of the appellant's success on the merits,

(3) The likelihood of the immediate and irreparable harm if the stay is not granted, and

(4) Whether the public interest favors granting the stay.

Approved By Robert J. Neary Date 4/24/95
Acting District Manager
Elko District Office

Concurred By Brad Hines Date 5/3/95
Acting State Director,
Nevada- Bureau of Land Management

ENVIRONMENTAL ASSESSMENT

INTEGRATED WILDLIFE DAMAGE MANAGEMENT PROGRAM

1994 - 1998

ELKO DISTRICT - BUREAU OF LAND MANAGEMENT

BLM/EK/PL-94/015
File 6830

TABLE OF CONTENTS

A. INTRODUCTION . . . 1

A1. Purpose and Need for the Proposed Action . . . 1
A2. Relationship of Actions to Federal and State Law . . . 2
A3. Conformance With the Land Use Plan . . . 2
A4. Memorandum of Understanding Between ADC and BLM and National BLM Standards . . . 2
A5. BLM Role in Administering the IWDM Program and the IWDM Work Plan . 3
A6. NEPA Compliance . . . 3
A7. Integrated Wildlife Damage Management . . . 3
A8. Nevada Regulations for Trapping . . . 4
A9. ADC Control Methodologies . . . 5
A10. Humane Treatment of Animals Issue . . . 5
A11. Preventive Control and Corrective Control . . . 6
A12. Changes in Analysis/Data Presented Following Public Review Period . 6
A13. Time Period of Effectiveness for this EA . . . 9

B. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES . . . 9

B1. Proposed Action . . . 9
B2. No Action Alternative . . . 13
B3. Restricted Management Alternative . . . 13
B4. Expanded Predator Management Alternative . . . 17
B5. Corrective Control Alternative . . . 17
B6. No Lethal Control Alternative . . . 18
B7. Compensation for Losses Alternative . . . 18
B8. Threshold Loss Scenario Alternative . . . 18
B9. Mountain Lion Sport Harvest Alternative . . . 19

C. AFFECTED ENVIRONMENT . . . 19

C1. General Setting . . . 19
C2. Scope of the Action . . . 20
C3. Wildlife . . . 20
C4. Threatened, Endangered, Candidate Species, and Raptors . . . 23
C5. Wild Horses . . . 23
C6. Livestock Grazing . . . 24
C7. Recreation . . . 26
C8. Wilderness Study Areas . . . 27
C9. Firewood Harvesting . . . 27

D. ENVIRONMENTAL CONSEQUENCES . . . 27

D1. Impacts of the Proposed Action . . . 27
D1a. Mitigating Measures for the Proposed Action . . . 38
D1b. Unavoidable Impacts of the Proposed Action . . . 38

D2. Impacts of the No Action Alternative . . . 39
D2a. Mitigating Measures for the No Action Alternative . . . 40
D2b. Unavoidable Impacts of the No Action Alternative . . . 40

D3. Impacts of the Restricted Management Alternative . . . 41
D3a. Mitigating Measures for the Restricted Management Alternative . . . 44
D3b. Unavoidable Impacts of the Restricted Management Alternative . . . 44

D4. Impacts of the Expanded Predator Management Alternative . . . 44
D4a. Mitigating Measures Expanded Predator Management Alternative . . 44
D4b. Unavoidable Impacts Expanded Predator Management Alternative . . 44

TABLE OF CONTENTS (cont.)

D5. Impacts of the Corrective Control Alternative 44
D5a. Mitigating Measures for the Corrective Control Alternative 46
D5b. Unavoidable Impacts of the Corrective Control Alternative 46

D6. Impacts of the No Lethal Control Alternative 46
D6a. Mitigating Measures for the No Lethal Control Alternative 48
D6b. Unavoidable Impacts of the No Lethal Control Alternative 48

E. MONITORING 48

F. RESIDUAL IMPACTS 49

G. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES 49

H. CUMULATIVE IMPACTS 49

I. PERSONS, GROUPS, AND AGENCIES CONSULTED 50

J. INTENSITY OF PUBLIC INTEREST 51

K. PARTICIPATING STAFF 52

LITERATURE CITED 53

ACRONYMS 56

GLOSSARY OF TERMS 57

ATTACHMENTS 62

LIST OF TABLES

PAGE

Table C-1 21
NUMBER OF TARGET SPECIES REMOVED BY ADC
ON PUBLIC LANDS ADMINISTERED BY ELKO DISTRICT-BLM
FISCAL YEARS (Oct.1 through Sept. 30) 1990-1994

Table C-2 22
COYOTE REPRODUCTION MODEL FOR ELKO DISTRICT-BLM

Table C-3 23
ADC PRIMARY CONTROL AREAS WITHIN WILD HORSE HERD AREAS

Table C-4 24
DOMESTIC SHEEP GRAZING ON ELKO DISTRICT-BLM 1990-1994

Table C-5 24
ADC REPORTED DEPREDATION LOSSES
ON PUBLIC LANDS ADMINISTERED BY ELKO DISTRICT-BLM
FISCAL YEARS (Oct. 1 through Sept. 30) 1990-1994

Table C-6 25
APPROXIMATE LIVESTOCK USE WHERE ADC ACTIONS
OCCURRED DURING FY 1994

Table C-7 27
WILDERNESS STUDY AREAS IN ELKO DISTRICT-BLM

Table D-1 31
NEVADA DIVISION OF WILDLIFE-REGION II
COYOTE SPORT HARVEST

Table D-2 31
TOTAL HUMAN CAUSED MORTALITY BREAKDOWN
ADC & NON-ADC ACTIONS ON PUBLIC LANDS
ADMINISTERED BY ELKO DISTRICT-BLM
AVERAGES OF TAKE FROM 1990 THROUGH 1994

Table D-3 32
PERCENT TAKE BY CONTROL METHOD USED BY ADC
DURING FISCAL YEARS 1992, 1993, & 1994
ON ELKO DISTRICT-BLM

Table D-4 39
ADC EMERGENCY REQUESTS ON ELKO DISTRICT-BLM
FY 1994

LIST OF ATTACHMENTS

ATTACHMENT 1	Proposed "Plan For Integrated Wildlife Damage Management 1994 - 1998"
ATTACHMENT 2	National Memorandum of Understanding Between BLM and APHIS
ATTACHMENT 3	Nevada Memorandum of Understanding Between BLM and APHIS
ATTACHMENT 4	Nevada Divsion of Wildlife 1994-95 Furbearing Mammals and Mountain Lion Seasons and Regulations
ATTACHMENT 5	Methods of Control (from the 1994 FEIS for the ADC Program)
ATTACHMENT 6	EPA-Approved Registrations for Pesticides (from the 1994 FEIS for the ADC Program)
ATTACHMENT 7	Estimated Coyote Densities in the Western United States
ATTACHMENT 8	Informal Consultation on Annual Work Plan for Animal Damage Control on Bureau of Land Management Districts in Nevada
ATTACHMENT 9	ADC Directive 2.101 Wildlife Damage Control Options
ATTACHMENT 10	ADC Directive 2.105 The ADC Integrated Wildlife Damage Management Program
ATTACHMENT 11	ADC Directive 2.450 Traps and Trapping Devices

ENVIRONMENTAL ASSESSMENT
INTEGRATED WILDLIFE DAMAGE MANAGEMENT PROGRAM 1994 - 1998
ELKO DISTRICT-BUREAU OF LAND MANAGEMENT

BLM/EK/PL-94/015
File 6830

A. INTRODUCTION

Per ADC Directive 2.105 (Attachment 10), the U.S. Department of Agriculture (USDA) - Animal Plant Health Inspection Service (APHIS) - Animal Damage Control (ADC) proposes to conduct Integrated Wildlife Damage Management (IWDM) on public lands administered by the U.S. Department of Interior - Bureau of Land Management (BLM) - Elko District . This environmental assessment (EA) examines ADC's IWDM work plan (Attachment 1) for public lands in the Elko District-BLM. IWDM activities are proposed to occur over portions of 7.4 million acres of public lands within Elko, Eureka, and Lander counties in northeast Nevada (Map 1 of the IWDM plan, Attachment 1). This analysis will cover IWDM activities for a five year period following issuance of the decision record, which may extend the plan beyond 1998.

The majority of IWDM activities are proposed to take place on areas where domestic sheep grazing occurs or where sheep are trailed between summer and winter range. Control is also initiated to alleviate losses to cattle, primarily when small calves are present. Most control activities would be corrective in nature, after documented livestock loss has occurred. Preventative control may also be initiated in previously identified problem areas (e.g. lambing grounds).

ADC's IWDM program serves individuals, groups, and agencies by responding to requests for assistance in controlling predator damage. Each project is initiated after receiving an oral or written request and after actual or potential damage is substantiated by ADC. Prior to 1992, preventive control may have been conducted year round on winter and lambing ranges without a request in sheep use areas where predation historically occurred. An agreement defining the methods of control and the species to be controlled is made between ADC and the landowner, lessee, or in the case of public lands, the land managing agency, before control work commences.

The overall goal of ADC's IWDM program on public lands in the Elko District is to minimize wildlife depredation by implementing control efforts toward specific animals or local populations within a specified area, which are causing damage to livestock or wildlife resources.

Target species in the Elko District involving ADC control operations are coyotes (*Canis latrans*), mountain lions (*Felis concolor*), and occasionally bobcats (*Felis rufus*) and ravens (*Corvus corvax*). Nontarget species captured by ADC activities during the period 1990 through 1994 include bobcat, badger (*Taxidea taxus*), blacktail jackrabbit (*Lepus californicus*), porcupine (*Erethizon dosatum*), mule deer (*Odocoileus hemionus*) and turkey vulture (*Cathartes aura*). Most of these nontarget animals were capable of self maintenance and were released back to the wild.

A1. Purpose and Need for the Proposed Action
The purpose of the ADC proposal is to reduce economic loss to livestock operations resulting from wildlife predation.

Demonstrated need for the proposed IWDM program is indicated by livestock loss data presented by ADC to BLM. Sustained animal damage control operations have been occurring in the Elko District for the last 20+ years. For the five year period of fiscal years (FY) (Oct 1 through Sept.30) 1994 through 1990, on public lands administered by Elko District-BLM, the average annual reported value of livestock losses to predators was $28,430 per year (Table C-5). In response, ADC took an annual average of 1,177 coyotes, 6 mountain lions, and 1 raven (Table C-1).

During FY 1994, ADC received 149 requests for assistance on public land in the Elko District. Reported losses of domestic livestock totaled $31,337 which included 229 lambs and 146 ewes to coyotes; 14 lambs to bobcats; 17 ewes and 41 lambs to mountain lions, and 3 lambs to golden eagles (*Aquila chrysaetos*). In response, ADC personnel took 193 coyotes by aerial hunting, and 145 coyotes and 6 mountain lions by ground methods. No nontarget species were taken.

A2. Relationship of Actions to Federal and State Law

Predator control on federal land is authorized by the Animal Damage Control Act of March 2, 1931 (7 United States Code 426-426b), as amended. This document states in part that ..."The Secretary of Agriculture is authorized and directed to ... conduct campaigns for the destruction or control of (predatory) animals". Further responsibility for the ADC program comes from the Rural Development, Agriculture, and Related Agencies Appropriations Act, of 1988 (P.L. 100-202) which pertains in part to the control of "nuisance mammals and birds".

The IWDM Program is conducted in Nevada by ADC in cooperation with the Nevada State Predatory Animal and Rodent Committee, the Nevada Division of Wildlife (NDOW) and local grazing boards. Nevada Revised Statute (NRS) 567.080 authorizes the State Predatory Animal and Rodent Committee to enter into agreements with ADC for the purpose of "... cooperative control of predatory animals, crop-destroying birds and rodents in and by such manners and methods whereby a maximum of protection against losses of livestock, poultry, game birds, animals and crops on a statewide basis best can be assured with a maximum of returns for the funds expended".

A3. Conformance With the Land Use Plan

Predator control is not specifically identified and discussed in current land use plans for the Elko District although its practice is incorporated by default since it is permissible by state and federal law. To the extent that ADC work might function to reduce the loss of domestic and wild animals without jeopardizing predator populations or other wildlife species, it is considered to be consistent within the broad scope of BLM multiple use planning for the District.

A4. Memorandum of Understanding Between ADC and BLM and National BLM Standards

National BLM policy for carrying out ADC activities to protect human health, safety, forest and range resources, other wildlife, agricultural crops, and livestock, is defined in BLM Manual 6830 (8/88).

The relationship between BLM and ADC in administering the IWDM program on public land is defined in a National Memorandum of Understanding (MOU), dated September 16, 1987, which provides mutual understanding between the two agencies (Attachment 2). The relationship is further defined in a Nevada MOU between BLM and ADC dated September 28, 1990 (Attachment 3). The Nevada MOU requires that an EA be prepared on the ADC's work plan which analyzes the following: (1) anticipated impacts to any threatened or endangered species, (2) effects of control on target and nontarget species, (3) alternatives to the proposed control plan, and (4) provisions for emergency control. This EA will analyze the above items.

Nevada BLM has standards related to ADC action in wilderness study areas (WSA's) and the use of lethal control methods which reflect the State Director's policies. These policies may differ from other adjoining states where BLM administers public land.

A5. BLM Role in Administering the IWDM Program and the IWDM Work Plan

Where IWDM is requested on public lands, it is BLM policy to determine if there is a demonstrated need for action. Demonstrated need for this program is indicated to BLM when livestock losses are verified in the field by ADC technicians and documented in their records.

Judgment as to whether or not IWDM is cost effective is a matter for ADC employees and Congress to defend, not BLM. IWDM is not a BLM program. BLM determines if the program planned by ADC would place predators or other animals in jeopardy as a result of their actions and, when necessary, places reasonable mitigating measures to prevent unnecessary damage to public land resources.

Except in emergency or other unusual circumstances, ADC does not report to BLM for each individual predator control circumstance throughout the year. Terms and conditions specified in the work plan and the BLM EA identify when, where, and what type of control by ADC is allowed. At an annual inter-agency meeting, the plan is reviewed along with loss data and control results. A subsequent signed agreement is used as a mechanism to determine the nature and extent of control from the previous year, and whether or not adjustments to the program on public land may be necessary.

BLM also reviews whether or not individuals seeking assistance, referred to as cooperators, are taking steps to pursue integrated management (the use of various control tools, both lethal and nonlethal). ADC policy states that ADC may provide technical assistance, direct control assistance, or both (Attachment 9). The correct mix of integrated control for individuals is subjective, to a degree, and a matter of judgment, and local circumstances. Evidence that this method is being pursued at a reasonable level needs to be demonstrated by ADC and cooperators.

BLM may assist in informing livestock operators about what constitutes IWDM and specifically what Bureau policies require. However, it is the responsibility of ADC to provide the details, literature, or other facilitating information to cooperators needing federal IWDM on public land.

A6. NEPA Compliance

This EA tiers to the Final Environmental Impact Statement (FEIS) completed for the Animal Damage Control Program in April 1994. A record of decision was issued March 7, 1995. Certain appendices of the FEIS are included as attachments in this document.

A7. Integrated Wildlife Damage Management

Predator control as carried out by ADC on public land in the analysis area is considered a resource management tool to be applied when and where necessary on individual depredating animals or on local populations causing damage. Predator control falls under a broadly defined program which is termed by ADC as Integrated Wildlife Damage Management (IWDM) (see ADC Directive 2.105, Attachment 10). It involves a variety of wildlife depredation management issues. Predator control in this context is planned and carried out in a systematic manner at the discretion of BLM in response to reported and historical needs.

The current IWDM program represents a departure from the character and intensity of predator control that was pursued in earlier decades within the analysis area. For a time, general predator population management by federal control agents was an accepted practice. Within the analysis area, compound

1080, or sodium fluoroacetate, bait stations were used liberally as a predacide prior to 1972, along with other methods to control coyote predation on livestock. This approach was reportedly quite effective in actually diminishing coyote populations over a large area. Currently, the only registered use of compound 1080 is in controlling predators with the livestock protection collar.

Optimum management of livestock depredation requires an integrated approach which uses a mixture of population management, animal husbandry, and behavior modification. In pursuing this management concept, ADC acts in an advisory capacity to those individuals seeking assistance and provides an array of options thought to be appropriate for local applications. As advisors, ADC has no authority to force cooperators to use the various methodologies presented by agency employees.

Because this program permits the destruction of wildlife, the humane treatment of animals is at the forefront of debate for some members of the public. On another level, much of the public interest and controversy that continues to surround predator control tends to focus on how much effort is being placed on the use of nonlethal means of predator management and whether or not there is proof that livestock losses reported are the direct result of predation.

Integrated control is a predator management program that does not fully rely on either lethal or nonlethal means to address livestock damage. However, lethal control actions must be based on verified losses suffered by cooperators which prove death loss has definitely occurred as a result of predation. The loss verification policy as stated in BLM Manual 6830 does not imply the requirement of validating each and every instance of damage in order for ADC to be authorized to carry out lethal actions.

Total reliance upon lethal control ignores the role and value of predators in the ecosystem, and raises doubt as to whether or not truly integrated control is actually being practiced by cooperators. Sole reliance upon lethal means without practicing other husbandry and avoidance options capable of limiting or resolving predator conflicts is an inappropriate management approach on public land.

Requiring cooperators to rely fully upon nonlethal control, while desirable from some standpoints and probably the most environmentally sound approach to predator management, is also not a realistic standard to impose on all cooperators. This approach ignores the reality that even in what may be considered substantially progressive and humane predator management settings, lethal control may need to be applied to protect livestock producers dependent upon or influenced by the public lands.

BLM Manual 6830.06E states that ADC ... "must be directed toward individuals or local populations of predators or depredating animals where losses or damage have been verified and the affected individual(s) has requested control services from APHIS." Moreover, under the 6830 authorization criteria ... "ADC programs may be authorized on public lands only when a documented damage problem or danger to public health exists. The presence of predator and rodent populations alone does not justify control measures".

BLM review of what ADC presents each year for predator management is highly dependent upon quality data brought forward from current and past years. Good records allow for effective analyses of the various control applications used in the District. This subject and its importance is described in section A12.

A8. Nevada Regulations for Trapping

The 1994-95 NDOW seasons and regulations for fur bearing mammals and mountain lions are included as background information in Attachment 4.

A9. ADC Control Methodologies
The full spectrum of ADC predator control techniques are described in the USDA 1994 FEIS entitled Animal Damage Control Program, APHIS, Appendix J, Methods of Control. This appendix is included as Attachment 5 for reference. The proposed action and alternatives within this EA do not include the deployment of all of these options. For a complete discussion on the effectiveness and documented successes of nonlethal methods of control, refer to section D3. of this EA.

It is appropriate to provide a somewhat detailed explanation for the use of aerial gunning in response to livestock loss situations. This practice is very objectionable to several segments of the public inside and outside of the analysis area. During the past three years, approximately 62% of the ADC coyote take for livestock protection in the analysis area resulted from this type of control (see Table D-3). Rationale used by ADC in justifying the use of this form of population control includes the following:

* Traps can often be ineffective in winter or early spring due to rain or snow which incapacitates the usefulness of leghold traps.

* Encrusted snow and muddy conditions in the early spring can hamper vehicle and horseback access into areas where problems arise. These conditions may limit the ability of producers who might otherwise prefer to remove only offending coyotes but are forced to take alternative action.

* Where calf/sheep losses are occurring and high numbers of coyotes are present, it is a cost effective method to reduce conflict situations. Coyote emigration from adjoining land, especially during calving/lambing, may quickly replace offenders that have been eliminated in the local area, thus leaving opportunities for continuation of damage.

* Aerial gunning can be carried out quickly and efficiently in contrast to trapping or hunting. The number of coyotes taken by aerial operations bear this out. Timing and efficiency during the birthing period for cattle and sheep can be an important consideration for producers.

*Aerial gunning can improve ADC response time and help to compensate for a limited workforce.

ADC spends the majority of time on sheep management actions versus cattle management actions in the conduct of aerial operations.

A10. Humane Treatment of Animals Issue
The issue of humane treatment of animals in relation to ADC's activities is an important sociological element of the IWDM program for many members of the public and a point of concern in several comments received during the EA review period. The original EA included a requirement for a 24 hour trap check period in the Corrective Control Alternative to address the humane issue. Several comment letters were received both supporting and opposing this measure. This final EA includes analysis of a 96 hour trap check as well as 24 hours.

The question of whether or not ADC's methodologies meet public expectations of humane treatment of animals or whether or not producers should even be able to practice lethal controls must be resolved within the legislative branch of government. It is unresolvable at the local EA level. Although BLM is aware of the conflicting points of view on this topic, current laws and policy permit the destruction of animals on public land when a demonstrated need is shown by producers or others threatened by predators.

A11. Preventive Control and Corrective Control

The interpretations of corrective and preventive control are described as background for the analysis which follows in this EA. Preventive and corrective control strategies are both allowable under BLM policy in Manual 6830.45, Processing Control Requests. BLM is therefore obliged to consider both classes of action when requested by ADC.

Corrective control includes taking appropriate lethal or nonlethal action on offending animals within the immediate vicinity of areas where livestock are being injured or killed by predators.

Preventive control occurs outside of the immediate vicinity of verified losses and can involve killing predators prior to livestock arrival on the public lands or before they become a problem on private lands. Situations have been described under A1. where livestock are repeatedly exposed to coyote predation on an annual basis. In the context of BLM policy, it is defensible that ADC anticipates that losses may continue to occur and that some preventive control may be justified.

In cases where preventive control may be justified, allowing for a two mile authorized kill area for cattle or sheep protection is a reasonable level of action that meets the need to protect producers (see Section A12.). This range fits a definition of reasonableness since it acknowledges coyote responses to fill vacated territories or travel to kill areas. Lethal control on public land beyond this 2 mile area, as a standard operating procedure, is hard to justify given BLM's policy to avoid killing predators simply because they are present and no immediate demonstrated need is shown. It is BLM's understanding that this kill zone would generally meet the need for producer problems.

If the two mile zone does not work in some local settings and ADC can demonstrate that it is too restrictive by showing continued verified losses, there is reason to adjust the zone outward on a case-by-case basis. This should be the exception rather than the rule. Furthermore, it should not be an overly burdensome requirement for ADC field technicians to use 7 1/2 or 15 minute quadrangle maps to determine where this 2 mile boundary should be for their operations.

A12. Changes in Analysis/Data Presented Following Public Review Period.

Written comments received during the public review period (March 28 through June 3, 1994) of the original EA titled "Integrated Wildlife Damage Management Program 1994-1998, Elko District Bureau of Land Management" influenced the level of analysis for this EA. Data inadequacies identified in the public comments on the original EA, review of other Nevada EA's, and comment's provided on them from the Department of Interior level, on the Boise District Animal Damage Control EA and the Vernal District Animal Damage Control EA, and the federal court decision by Judge Aldon Anderson on the Dixie National Forest were viewed as important cues guiding the preparation of this EA. BLM noted the points on demonstrated need of a predator control program, data quality, and the requirement of a coyote population estimate as particularly important.

A summary of some key points of change or reevaluation is included under the following subheadings:

Information Inadequacy

It is clear from the comments received through the comment period of the original EA that several critics of the program have felt that the necessary quality and detail of data to judge whether or not BLM and ADC are fostering integrated control on the public lands which is based on need was lacking. Many of those living outside of the analysis area, who are interested in public involvement with IWDM, have felt a deep sense of frustration about the lack of specific local data ADC has been using to justify the program. As a result, they feel there is no other recourse to this problem than to file appeals and force the courts to decide on adequacy.

The approach in this EA was to address concerns expressed by the public as thoroughly as possible by bringing a higher level of detail into the affected environment text, examining existing professional opinions and literature more closely, compiling a more detailed profile of ADC in the analysis area, and then formulating the analyses accordingly. Intensified public interest in the program has changed the level of analysis and data necessary to administer this program.

Many of the points made during the public comment period had merit and pointed out oversights of information presented. Many, but not all, of the questions posed are answered in this EA through tables or narratives. BLM believes that the most appropriate way to address any remaining inadequacies is to require ADC to supply specific data, make a more accurate assessment of what each cooperator's situation is regarding need for predator management annually, and make adjustments in authorizations if necessary.

Data inadequacies that have surfaced are ones in which it is not possible to determine the discrete actions and rationale used by ADC per cooperator. Serious problems of jeopardy to coyote populations or other nontarget animals are not indicated by the information that is known at the present time. The fact that coyotes have caused damage to livestock within the analysis area is not in question.

As more specific data from ADC is presented, there may be situations in the future that call for adjustments in cooperator practices on public land. This type of adjustment may be implemented, where appropriate, under BLM authority (43 Code of Federal Regulations §4130.6) which pertains to orderly administration of the range program. Where a new management practice is chosen as a requisite to be used along with lethal control, BLM would examine effective control practices in similar circumstances such as landscape setting, size of livestock herd, and so on.

The problem of data quality for administering the program surfaces in several ways. For example, a substantial number of coyotes are taken by ADC in sheep allotments because of lamb vulnerability, but with current data it is not clear whose allotments account for the greatest number of coyote problems, how much was preventive or corrective, and how that relates to cooperator efforts at avoiding losses. Although the Bureau recognizes ADC as the technical experts in choosing control programs and that IWDM is not a BLM mission, policy requires that there must be a review of what is being pursued and if it is reasonable for application on the public lands. A correlation analysis of losses and cooperator practices with better quality data would allow for a more informed decision process in the future.

The circumstances surrounding the need for lethal control where BLM permittees are lambing/calving on public lands is also an important issue. BLM needs to clarify whether users practicing this form of animal husbandry are doing so as a result of permittee preference or necessity. There may be opportunities for diminished need of lethal control in this area, but BLM needs to assess each situation individually.

District-wide elimination of lambing/calving on all public land would be arbitrary and unfounded by data indicating the need for such action.

Other Decision Documents

In other deliberations about IWDM, other agency decisions were considered that were provided as possible alternatives to current management. Specific examples include what has taken place on the Vale District-BLM (Oregon), the Sawtooth National Forest- Idaho, and the Manti-La Sal National Forest- Utah.

In Vale, the decision was to allow a mixture of animal husbandry, behavior modification, and local population management practices to diminish livestock losses by predators, either from or on public lands. Preventive and corrective actions of a lethal or nonlethal nature are allowed. Preventive aerial gunning is limited to 30 days prior to turnout and is not allowed after sheep leave the public ground. Preventive aerial gunning is limited to within 2 miles of confirmed livestock kill areas only. Lethal control activities on public land are not to be authorized where persistent sheep loses are occurring and livestock permittees fail to utilize ADC recommended nonlethal methods. M-44 use is not authorized as a standard operating procedure on public land and is subject to approval by the State Director on a case-by-case basis. The Vale decision does not permit the use of any chemical toxicants, besides the potential use of M-44s. Traps, snares, or stationary toxicants are not allowed within upland game bird areas during the hunting season. This program differs significantly from what has historically occurred on the Elko District, and is more confining for ADC to conduct control activities. Nevertheless, ADC in Oregon has indicated this program is workable (personal communication, Jon Sadowski - Vale BLM Wildlife Biologist, April 1994 through the Winnemuca District-BLM).

In the Sawtooth National Forest, the Forest Service was compelled to make some very conservative ADC choices due to the following reasons:

* A high amount of summer use by recreationists which overlapped with sheep or cattle grazing periods, making trap use very hazardous to humans.

* A high population of "non-traditional" residents who have moved to the area from other urban settings and have differing views of what is acceptable for ADC and producers to pursue in the way of predator control. Local resident sentiments appeared to play a substantial role in crafting the decision.

* High numbers of domestic pets in the area were susceptible to trapping losses and injuries.

This analysis may not precisely depict all the reasons for the decision made, but it seems clear that rationale was presented for a program which differs significantly from what may be acceptable or required in the Elko analysis area. In Elko as proposed, IWDM on public land, with a high potential for conflict where intensive recreational use occurs, is restricted by either seasonal removal of traps or total closure except in the most extreme circumstances where public safety or another emergency is demonstrated.

BLM considered the 2 mile radius for control in confirmed loss situations stipulated in the Manti-La Sal decision and concluded that it would likely allow ADC to conduct a reasonable amount of preventive control without being overly liberal in its application. Vale BLM contacted Rod Player (Wildlife Biologist) on the Manti-La Sal National Forest (EA# OR-03-92-14) and determined that although this required stipulation is more confining for ADC to operate under, it is nevertheless workable based on their experience and what has been indicated by ADC in Utah.

Confirmation of Losses

The issue of determining the level of BLM involvement in verifying confirmed losses reported by producers is perhaps the most difficult issue to deal with. This topic has been brought out by individuals that commented on the original EA and in other places where IWDM is practiced on public land. This is especially troubling for BLM where losses are occurring on private lands and the Bureau has no management authority or desire to intrude onto private property.

There is great difficulty with this program element given BLM is supposed to be reviewing the overall ADC IWDM program, and determining if they are pursuing their own policy of integrated control on public land. This requires looking at the overall approach to predator management for each requestor. The suggested option of requiring photo evidence to document verified livestock kills by predators is not a very realistic solution. Photo documentation may open the door to other forms of deception, by those who may already be inclined to do so, which would be equally hard to validate.

At this point, BLM must assume ADC and cooperators are reporting accurately when damage problems arise and that inconsistencies for some may be revealed and dealt with as specific data is presented over time. The modest ADC work force and fiscal resources limits the capability to examine each individual carcass in a timely manner to verify the cause of death. No one contacted on this topic seemed to have an exceptionally good solution to building a higher level of trust about what is reported as a predator loss. IWDM is not a BLM program, and the Elko District does not plan to field check every incident on what ADC presents as verified losses each year.

No Action Alternative
Several comments were received about the lack of a No Action Alternative in the original EA. A No Action Alternative has been included in this EA.

A13. Time Period of Effectiveness for this EA

In accordance with BLM Washington Office Instruction Memorandum No. 93-107, this analysis will cover IWDM activities for a five year period following issuance of the decision record, which may extend the plan beyond 1998. An earlier revision will be completed if ADC presents a program to BLM with substantially different procedures that could result in impacts not analyzed in this EA.

B. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

B1. Proposed Action

The proposed action is to administratively approve, with or without additional restriction, ADC's proposed Plan For Integrated Wildlife Damage Management 1994-1998 (Attachment 1), on selected public lands in the Elko District. The proposed program emphasizes a mixture of lethal and nonlethal methods to provide predator control in any given situation.

Lethal control methods that would be used in planned areas include leghold traps, aerial hunting, calling and shooting, denning (including the use of gas cartridges), snares, trained dogs, M-44's, and DRC-1339. Appendix Q of the 1994 USDA Final EIS incorporates the Environmental Protection Agency (EPA) approved registrations for pesticides used in the ADC program. Portions of this appendix that address pesticides proposed to be utilized on the Elko District are included as Attachment 6. These methods would be applied as either a corrective or preventive strategy. Target species for IWDM control include coyotes (*Canis latrans*), mountain lions (*Felis concolor*), and bobcats (*Felis rufus*) which are controlled as needed to alleviate predation on domestic animals. Secondary control may involve ravens (*Corvus corvax*) and starlings (*Sturnus vulgaris*). Management actions would be directed towards localized population(s) and/or individual coyotes, ravens, starlings, offending mountain lions, and offending bobcats.

Three zones of control are proposed on public lands and are delineated on Map 1 of the IWDM plan (Attachment 1) according to the following color code:

RED - Human safety zones. Areas where control is prohibited except in case of emergency. These are areas around streams, developed campgrounds, communities, and along major highways.

GREEN - Planned primary control areas. These areas generally are domestic sheep allotments and trailing areas where control measures may be necessary to effectively limit depredations.

YELLOW - Coordinated control zones. Areas where no control is scheduled. In cases where local damage problems may arise that jeopardize human health, safety, or property, immediate action may be taken by ADC to eliminate or curtail the problem upon receipt of a request for assistance. Using the procedures identified under Emergency Situations, the request for such action will be coordinated between BLM and ADC as soon as practicable, even though immediate steps may have been initiated. Follow up reports of requests received, action taken, and results will be provided.

Primary IWDM activities are proposed for roughly 18% of the District (see Map 1 of the IWDM plan, Attachment 1) where domestic sheep grazing occurs (both winter and summer) or where sheep are trailed between summer and winter range. Most of the IWDM activities proposed are corrective in nature, after documented livestock loss has occurred. Preventive IWDM is proposed only in areas previously identified as problem areas, and prior to use by domestic sheep. These areas usually include lambing grounds.

In the case of mountain lion depredations, IWDM activities would be initiated only after livestock losses have been verified by ADC employees. Lions would be trailed off the kills with dogs, "treed" if possible, then shot. Two other IWDM methods include snaring at the lion kill site, or shooting on sight.

The control actions and special considerations proposed in the IWDM plan are as follows:

ADC would continue to encourage the use of nonlethal methods to minimize depredation losses. This includes making available to affected livestock permittees information regarding nonlethal methods, or providing nonlethal devices as are presently developed or would be developed in the future.

Sheep Protection
Seasons of Control - Control emphasis would be placed on the time period immediately preceding and during actual livestock use. IWDM activities on lambing, summer, and winter ranges would occur just prior to and during periods of livestock use.

Types of Control - Leghold traps, aerial hunting, shooting, denning, snares, M-44's, and trained dogs would be used as appropriate. Emphasis would be on coyote damage control but mountain lion and bobcat control would also be accomplished when these species are found to be responsible for losses.

Cattle Protection
Seasons of Control - Any time of year that losses occur. Losses are normally confined to the seasons when small calves are present.

Types of Control - Aerial hunting would be the primary control method used, but leghold traps and trained dogs may be employed as appropriate.

Shooting or using eggs treated with the chemical DRC 1339 (Starlicide) may be needed to control raven or starling depredations. ADC would complete the requisite Pesticide Use Proposal (per BLM Manual Section 9011) which would then be submitted by BLM to it's Washington D.C. office for approval prior to any pesticide application (M-44's are considered a pesticide). Advance notification would be given to the BLM District Manager prior to pesticide application. Use of pesticides would be restricted primarily to spring lambing and calving ranges. No pesticides are proposed for use in wilderness study areas.

Special Considerations
1. All control programs will be conducted within new and existing Animal Damage Control (ADC) policies, BLM Manual 6830 (8/88), Nevada State ADC-BLM MOU, and all applicable State and Federal laws.

2. Areas of Control: IWDM activities will be limited to the primary control areas marked in green on Map 1 attached to the plan, except as provided under "Emergency Situations".

3. Public Safety, No Control Zones: No control devices are allowed within the public safety or no control areas shown in red on maps within the plan and/or specified below, unless needed for public health or safety.

> Within three miles of any community, including unincorporated towns such as Spring Creek, Ryndon, and Lucky Nugget.
>
> Within one-quarter mile of any State or Federal Highway.
>
> Within one mile of all developed recreation sites, major mines, and isolated residences.
>
> Within one-half mile of the firewood cutting areas identified on Maps 2A-L.
>
> Within the South Fork of the Owyhee River Canyonlands area from the Gauging Station in T. 45 N., R. 49 E., Sec. 16 MDM north to the Idaho/Nevada border during the months April through June.

4. Posting Control Areas: Signs will be posted to provide adequate warning of all areas where control devices are in use. Enough signs will be installed at commonly used access points to ensure public safety.

5. Modification of Control Areas: The BLM District Manager may, at any time, restrict or modify ADC's control activities on the public lands for multiple use management or public safety reasons.

6. Monitoring: Within the primary control areas (green on Map 1 of the IWDM plan, Attachment 1), ADC will monitor target species population levels through the methods outlined under "Monitoring" within the plan to determine annual trends. The intent of authorization of this plan is that IWDM efforts will be directed towards offending depredating animals while ensuring viable populations of target species continue to remain part of the ecosystem in these areas. At the very least on an annual basis, this monitoring data will be evaluated jointly by ADC, Nevada Division of Wildlife (NDOW), and BLM to determine the extent of control efforts and the modification of those efforts if required to meet population objectives.

7. M-44 Use: Use of M-44's will generally be allowed only in the primary control areas (green on Map 1 of the IWDM plan, Attachment 1) and only in compliance with the Environmental Protection Agency's (EPA) 26 restrictions and appropriate State laws. Because M-44's are a chemical toxicant, any proposal for their use, must be submitted to BLM-Washington Office 230, on a Pesticide Use Proposal for review and concurrence. Prior to deploying M-44's, notification will be provided to the appropriate BLM Manager. This notification will include a written statement with the following:

> a) the general area where the M-44 units are proposed for use, b) the expected period of use, and c) the losses documented to justify their use.

BLM must be notified each time M-44s are used, to enable it to answer any questions regarding the use of this toxicant in the target area.
BLM will be notified as soon as practical as to the number and general locations of all M-44's placed. During M-44 use periods, monthly reports will be provided to the BLM Area Manager to summarize the number and species of the animals taken, the number of M-44's being used, and the livestock losses documented in the areas where M-44's are being used.

On a case-by-case basis, use of M-44's may be allowed outside of primary control areas (green on Map 1 of the IWDM plan, Attachment 1) only after the BLM District Manager's approval. Approval is contingent upon prior written notification by ADC identifying the extent of the problem, the area requiring control, and the length of time and amount of M-44 use required.

Signs will be posted at commonly used access points and other required locations in accordance with ADC policy, and EPA's regulations in order to insure proper public notification.

During upland bird seasons, proposed M-44 use will be coordinated between NDOW and ADC, so heavily hunted areas or areas of bird concentration can be avoided in an effort to prevent accidental deaths to domestic dogs or public contact with M-44's.

M-44 use will be limited to vegetation types not dominated by pinyon/juniper during the period 11/15 through 12/25 to reduce possible public contact during the Christmas tree cutting season.

8. Wilderness study areas are not within primary control areas under this plan. Approval by BLM will be required before any control actions are taken within wilderness study areas identified on Maps 3A-H in the IWDM plan, (Attachment 1). If control activities are required under emergency procedures, then all ADC control activities within wilderness study areas will meet the following stipulations:

a. Prior authorization will be sought from the BLM District Manager before any control action is implemented. In the case of confirmed livestock losses from mountain lions which occur outside normal duty hours, control efforts may proceed with notification to occur as soon as practicable but no later than the following working day. Case-by-case authorizations will be sought to insure that all appropriate precautions are exercised to conserve wilderness values.

b. District-wide wilderness study area maps will only be used for general reference. Maps with a scale of at least one-half inch to the mile will be used in the field during ADC's control activities to determine wilderness study area boundaries.

c. All control operations to be conducted in wilderness study areas will be in compliance with "The Interim Management Guidelines for Lands Under Wilderness Review". These guidelines read in part:

"Animal Damage Control activities directed at individual offending animals....may be permitted, so long as this will not jeopardize the continued presence of any species in the area."

The primary (selective) method of removing offending animals will be with firearms either from the ground or air. Other control methods may be proposed on a case-by-case basis as appropriate. Offending animals will normally be taken within two weeks of the depredation episode. Any extension beyond two weeks must be justified by ADC and approved by the BLM District Manager prior to an extension being granted.

d. Control actions and losses within wilderness study areas will be documented to provide a complete record for BLM and ADC managers.

e. It is understood that all proposed control activities within BLM administered wilderness study areas require prior approval by the BLM District Manager and will meet other stipulations specified in BLM Manual 6830 on Animal Damage Control (8/4/88) Section 4C.
M-44's will not be used in wilderness study areas except for the protection of federally designated threatened or endangered species.

Emergency Situations

Situations may develop where wild animal vector or local damage problems occur on public lands that jeopardize health or property, that fall outside the primary control (green) areas designated on Map 1 of the IWDM plan (Attachment 1). In situations such as confirmed significant losses of livestock (several animals of a herd), or confirmed significant harm to human health (e.g. rabies or bubonic plague outbreaks), immediate action may be taken to eliminate or curtail the problem using the following procedures:

A. If the request is not from NDOW or BLM, then the affected individual(s) must submit loss data to and request control from ADC.

B. ADC evaluates the loss data and determines whether emergency control measures are warranted. If immediate action is warranted and the area of concern lies within the coordinated control area (yellow), outside of wilderness study areas (Maps 3A-H), and does not involve the public safety zones (red) designated on the maps attached to the plan, ADC conducts necessary control actions using permitted methods and notifies the Bureau as soon as possible. If control activities are required in public safety areas (red/no control), then prior written approval from the BLM District Manager or other authorized official would be required before any control actions are initiated.

C. If time is not of the essence, then ADC will provide the BLM District Manager a project request form, verifying the loss by the affected individual and showing that such loss has recently occurred, and a brief written explanation of where the control measures are proposed, the methods to be used, and how long the activities will continue.

D. The BLM District Manager will evaluate the control request, based on the information provided, decide whether to approve control operations, and notify the appropriate ADC official.

E. If control operations are authorized, the damage control request and associated information will become addendums to the IWDM plan and attached maps.

F. In instances where control activities of a nature that are not identified in this plan become necessary; then control efforts can be considered on a case-by-case basis, and initiated upon concurrence by all three signatory agencies to the plan. The documentation associated with each such incident will subsequently be added to the plan.

Nevada Division of Wildlife has no current requests pending for ADC to control predators or rodents on public lands in the Elko District-BLM to benefit other wildlife species, such as bighorn sheep or pronghorn antelope that have been reestablished to historic ranges. This type of request if received would be administered according to the special considerations and emergency procedures identified above.

B2. No Action Alternative

Under this alternative, no predator control activities by ADC would be authorized on public lands administered by Elko District-BLM.

B3. Restricted Management Alternative

Under this alternative, ADC and its cooperators would pursue an Integrated Wildlife Damage Management Program that utilizes a mixture of animal husbandry, behavior modification, and local population management practices to diminish livestock losses by predators either from or on public lands. Preventive and corrective actions of a lethal or nonlethal nature for certain classes of livestock would be allowed. The program would be directed at offending individuals or local populations of predators, primarily coyotes, on public land.

Predator control would be requested by the livestock cooperators through approved ADC procedures and comply with all elements required in BLM Manual 6830. BLM reserves the administrative authority to accept or deny proposals presented by ADC for the public lands.

Integrated wildlife damage management actions under the Restricted Management Alternative include the following:

Animal Husbandry

* To the extent practical, avoidance of areas with known high potential for livestock death or injury from predators.

* Removal or burial of livestock carcasses whenever possible to avoid attracting coyotes.

* Timing of calving to coincide with the spring emergence of native prey such as ground squirrels, which are food sources for coyotes, that can reduce predator reliance upon domestic livestock for food.

* Calving or lambing within fenced quarters on private land where there is good opportunity to practice quality herd supervision by cooperators.

* Use of employees/herders to supervise calving or lambing on public land in order to facilitate removal of offending coyotes.

* Periodically culling livestock herds so that healthy, disease-free stock are being grazed on or near the public lands.

* Sheep herder camp locations within 200 yards of bands being supervised.

* Avoidance of bedding sheep for more than two nights in the same location.

* Use of stock dogs or guarding dogs to discourage coyote predation.

* Use of llamas or burros in livestock herds to discourage coyote predation.

Behavior Modification

* Use of strobe lights, sirens, radios, pyrotechnics, and all other forms of noise and disturbance makers which temporarily frighten coyotes and discourage predation situations.

* Any other types of actions not listed, which meet the intent of nonlethal control measures and have been proven to be effective by research or local practical application, could be approved by BLM on a case-by-case basis.

Population Management

* ADC lethal control methodologies authorized, used singly or in combination, may include leghold traps, head snares, foot snares, denning, calling/shooting, hunting dogs, and aerial gunning. The prescription(s) would be designed using the judgment and experience of ADC field specialists and reviewed by BLM at an annual meeting.

Sheep Producer Standards

* Authorization of aerial gunning for preventive control on sheep allotments would be based on the history of confirmed and reported damage and the permittees demonstrated use of proven nonlethal control measures as advised by ADC.

* Preventive aerial gunning for sheep producers, prior to arrival on the public lands, would be limited to two weeks prior to turnout. No aerial gunning would be allowed after sheep leave the public land.

* Preventive aerial gunning for sheep protection on the public lands would be allowed within 2 miles of confirmed livestock kill areas only.

* Where persistent sheep losses are occurring and livestock permittees fail to utilize ADC recommended nonlethal methods, lethal control activities on public land would not be authorized. Lethal control may be conducted after the permittee implements recommended nonlethal techniques and ADC determines that additional methods are required to further reduce losses.

Cattle Producer Standards

* Aerial preventive gunning to protect cattle would not be allowed. Corrective lethal methods, if required, may be authorized.

Additional Conditions

* ADC lethal control would not be authorized in wilderness study areas (WSAs) in Elko District-BLM. Approval for lethal control may be granted at the discretion of the Nevada BLM State Director for highly unusual or emergency situations on a case-by-case basis. Any action proposed within a WSA would be conducted in accordance with BLM WSA Interim Management Policy (IMP) for Lands Under Wilderness Review (H-8550-1). Actions within all WSA's would meet the non-impairment criteria as stated in the IMP. All vehicular traffic off of existing roads and trails would require prior approval by BLM.

* Extension of the 2 mile preventive kill zone may be authorized by BLM on a case-by-case basis by the District Manager or other BLM authorized officer after ADC demonstrates, with verified kill evidence, that livestock loss continues.

* M-44 use would be subject to approval by the Nevada BLM State Director on a case-by-case basis. They would not be authorized as standard operating procedures on public land administered by Elko District-BLM under this alternative. M-44 use may be requested in very limited situations where other control techniques have been exhausted in attempts to control predation situations and verified losses continue to occur.

*The program may be directed at offending individuals or local populations of predators, primarily coyotes, on public land. Management actions directed at mountain lion and bobcat may be conducted on an emergency basis after the confirmation of damage or in circumstances threatening public safety. BLM authorization would be required prior to each control effort directed at mountain lions or bobcats. The total number of mountain lions or bobcats killed by date, method, and by BLM grazing allotment township, range, and section would be provided by ADC to BLM at an annual meeting.

*Except for potential use of M-44's, this alternative would not permit the use of any chemical toxicants on public land. Chemical toxicants would not be permitted in WSA's under any circumstance.

*ADC aerial operations below 500 feet would be conducted to avoid wild horses between March 1 and June 30 unless authorized by the District Manager.

*ADC would be required to notify the District Manager or designated agent immediately prior to any aerial control work.

*ADC would provide cooperators with technical assistance and information concerning lethal and nonlethal control methods.

*In areas where the take of nontarget species increases beyond levels NDOW/ADC/BLM believes to be acceptable to the maintenance of those populations, every effort would be taken to avoid the further take of the species of concern.

*All leghold traps, head snares, foot snares and similar devices would require checking at least every 96 hours.

*ADC aerial operations would require alteration when any large raptor nest is encountered on public land in order to avoid collisions or harassment. ADC technicians would be required to keep a ¼ mile buffer between active nest sites and aircraft used for control work as soon as raptors are encountered.

*There may be circumstances in which ADC field technicians cannot get to cooperators for the purpose of loss confirmation. This is a distinct possibility due to the limited ADC workforce. In these cases, documentation of confirmed loss (necropsy) could be done by a licensed veterinarian.

*All control programs would be conducted within new and existing Animal Damage Control (ADC) policies, BLM Manual 6830 (8/88), Nevada State ADC-BLM MOU, and all applicable State and Federal laws.

*Signs would be required to be posted to provide adequate warning of all areas where control devices are in use. Enough signs would be installed at commonly used access points to ensure public safety.

*The BLM District Manager may, at any time, restrict or modify IWDM activities on the public lands for multiple use management or public safety reasons.

*Lethal control activities would be limited to the primary control areas marked in green on Map 1 of the proposed IWDM plan (Attachment 1), except as provided under "Emergency Situations".

Public Safety, No Control Zones

No traps, snares, or toxicants would be allowed within the public safety or no control areas shown in red on maps within the proposed IWDM plan (Attachment 1) and/or specified below, unless needed for public health or safety.

a. Within three miles of any community, including unincorporated towns such as Spring Creek, Ryndon, and Lucky Nugget.
b. Within one-quarter mile of any State or Federal Highway.
c. Within one mile of all developed recreation sites, major mines, and isolated residences.
d. Within one-half mile of the firewood cutting areas identified on Maps 2A-L.
e. Within the South Fork of the Owyhee River Canyonlands area from the Gauging Station in T. 45 N., R. 49 E., Sec. 16 MDM north to the Idaho/Nevada border during the months April through June.

Endangered Species Act Compliance for Northern Bald Eagle

In order to be exempt from the prohibitions of Section 9 of the Endangered Species Act for the northern bald eagle, the following terms and conditions are part of this alternative:

1. ADC personnel shall contact either the Nevada Division of Wildlife (NDOW) or the Reno Field Office of the United States Fish and Wildlife Service (USFWS) to determine roost locations.

2. The USFWS Reno Field Office shall be notified within 5 days of the finding of any dead or injured bald eagle. Cause of death, injury, or illness, if known, shall be provided.

3. Leghold traps (except those used to trap mountain lions) shall be placed a minimum of 30 feet from aboveground bait sets.

Emergency Control Provisions
Emergency actions would be allowed as defined in BLM Manual 6830, Animal Damage Control under this alternative. This is for unusual situations where there may be a need to depart from stipulations identified. A conference with BLM would be initiated by ADC in person or by phone so BLM may analyze the loss and risk situation and proceed accordingly with acceptance or denial.

Monitoring
The following specific information about the previous year's IWDM program would be provided by ADC to BLM by early December each year under the Restricted Management Alternative:

1. The total number of livestock per class, age, and location (by BLM grazing allotment and by canyon, creek, other landmark, or by township, range, and section) lost as a result of predation. Whether these were verified by ADC or reported (suspected) losses to predation shall be identified.

2. The total number and species of predators killed by date, method, and location (by BLM grazing allotment and by canyon, creek, other landmark, or by township, range, and section).

3. The total number of predators killed, by species, as a consequence of preventive or corrective action.

4. The total number of nontarget animals taken by date, method, species and location (by BLM grazing allotment and by canyon, creek, other landmark, or by township, range, and section). Whether or not the animal was released alive and capable of self maintenance, died, or had to be euthanized as a result of injury shall be identified.

5. The steps taken by each cooperator to pursue animal husbandry and behavior modification actions which limit the need for lethal controls on the public lands. No lethal control would be allowed on public land until this data is provided by cooperators to ADC. ADC would be required, in turn, to provide the information to BLM before formulating the annual control agreement or responding to individual requests where this information has not already been supplied by cooperators.

B4. Expanded Predator Management Alternative

Preventive and corrective control actions would be pursued as aggressively as legally possible by ADC and certified pesticide applicators.

Preventive and corrective aerial gunning would occur yearlong as needs were identified. Aggressive use of M-44's for preventive control would be employed. Additional controls, if approved and registered in Nevada, including single-dose lethal baits, chemosterilants, and livestock protection collars (plastic collars treated with the poison compound 1080) could be used. M-44's would still be subject to the approval of the BLM State Director. Restricted use pesticides would be applied by certified pesticide applicators.

B5. Corrective Control Alternative

Under this alternative, lethal control work by ADC on Elko District-BLM administered lands would be corrective in nature with control conducted only after verified losses occur with approval on a case-by-case basis required by BLM, after ADC and cooperators demonstrate need. Use of M-44's and preventive control work would not be allowed. Traps, snares, and other similar devices would be required to be checked daily. The conditions, except those applying to trap visitation and preventive control, " primary control areas", and "no control/public safety zones" described in the Restricted Management Alternative, would apply to this alternative as well.

BLM and ADC would encourage livestock operators to expand and/or continue their use of trained guard dogs, llamas, scare devices, or other new nonlethal methods. On herds where ADC has certified to BLM that one or more of these nonlethal methods is being used, lethal corrective IWDM activities may be initiated on the Elko District once ADC personnel have verified that livestock have been lost to predation and it is determined that the losses are unacceptable and control actions are warranted. On herds not using one or more of these nonlethal methods, no lethal control would be permitted.

Cooperators would be able to use all lethal and nonlethal methods subject to State and Federal laws and regulations.

B6. No Lethal Control Alternative

No lethal control would be conducted on public land by ADC except where emergency control is necessary for public safety.

ADC would employ propane exploders, pyrotechnics, siren-strobes or other like devices at their discretion in an attempt to stop persistent livestock predation situations. They would also continue to investigate, confirm, and record all reported damage situations to insure that documentation is maintained and responsible control techniques are used. Technical assistance and information would continue to be provided to cooperators.

Any other types of actions not listed which meet the intent of nonlethal control measures and have been proven to be effective by research or local practical application could be approved by BLM on a case-by-case basis.

B7. Compensation for Losses Alternative

This alternative would compensate livestock losses suffered by producers through direct payments based on estimated or documented damage.

Economic impacts to livestock growers as a result of choosing to not pursue any of the known lethal and nonlethal means could be offset by payments for estimated losses. There is no known legal mechanism in place at the present time which would permit this type of payment. Moreover, because of the need for government funding to make this work, the procedure would require legislation at the state or federal level and is therefore outside of the scope of this analysis.

Further analysis of this option is not explored within this EA because no legal mechanism is in place to implement such an alternative, should it be selected. This alternative would also require a determination of the economic efficiency of ADC, which is not BLM's role.

B8. Threshold Loss Scenario Alternative

Nonlethal controls of all sorts as previously described would be pursued prior to the use of lethal control methods. Lethal control could be allowed after a threshold of livestock loss was sustained by producers.

The number of losses (threshold) triggering the need for control could be calculated for example using the Oregon State University Extension Service data which indicates statewide average predator losses to be 1.6% for ewes, 3.9% for lambs, .74% for calves and .4% for cows, or some other threshold.

This alternative was not pursued because of the relative nature of thresholds, the range of values of individual animals, the amount of losses that could be sustained between the onset of the threshold and control of the offending animals, the variety of kinds or size of livestock, and the ability of operators to sustain loss.

B9. Mountain Lion Sport Harvest Alternative

This alternative is similar to the Proposed Action, except that mountain lions, when control is required, would first be offered for sport harvest through NDOW's big game management program. Under this alternative, if sport harvest could not be completed within 48 hours, then ADC personnel would be allowed to conduct depredation control efforts.

This alternative was dropped from further analysis based upon responses from NDOW and ADC that indicated it is not feasible because the legal framework is not in place to institute such an alternative.

C. AFFECTED ENVIRONMENT

Only portions of the environment which IWDM activities (or the lack of IWDM activities) directly affect will be discussed in this EA.

The following critical elements of the human environment are not present or are not affected by the proposed action or alternatives in this EA:

Air Quality
Areas of Critical Environmental Concern
Cultural Resources
Farm Lands (prime or unique)
Floodplains
Native American Religious Concerns
Paleontology
Visual Resources
Wastes (hazardous or solid)
Water Quality (drinking/ground)
Wetlands/Riparian Zones
Wild and Scenic Rivers

C1. General Setting

The Elko District encompasses most of Elko County and the northern portions of Eureka and Lander Counties within Nevada. Map A orients the reader to the arrangement of BLM districts in the state of Nevada. BLM administers a total of approximately 7.4 million acres of public land in the Elko District.

The Elko District lies within the Basin and Range and Columbia Plateau Physiographic Provinces. In the Basin and Range Province, land form consists of north-south trending mountain ranges 5 to 15 miles wide and usually 50 or more miles long, separated by broad, flat valleys. Valley floor elevations range generally from 4,700 feet to 6,000 feet. Mountain elevations are typically 8,000 to 9,500 feet. The Columbia Plateau Physiographic Province characteristically consists of rolling plateaus of low relief, broken by occasional buttes, and dissected by steep narrow canyons.

Climate is characterized by a continental temperature regime with arid to semi-arid conditions in the valleys and on lower mountain slopes, to sub humid conditions near the crests of the higher mountains. Average annual precipitation ranges from 6-8 inches on the valley floors to over 20 inches on higher mountains. Snowfall varies greatly, from less than 10 inches near the town of Wendover, to more than 100 inches in the high mountain ranges.

Large daily and seasonal temperature variations are common across the district. Temperatures range from summer highs of 90 to 100 degrees F and winter lows near -10 degrees F. The growing season varies from less than 70 days in the northern part of the district to 100 days in the south.

The Humboldt River, Upper Bruneau River, South Fork Owyhee River, and Salmon Falls Creek are the principal drainage systems within the district. Several small interior basins or numerous valley playas are also scattered throughout the district. Approximately 1,128 public stream miles occur within the district.

Surface water quality varies throughout the district. Except for a few thermally influenced springs, all surface waters are suitable for livestock and irrigation uses. Major influences by man on the surface waters are from agriculture, livestock grazing, and mining.

The district supports vegetation typical of the Great Basin. The extremes of climate, elevation, exposure, and soil type, all combine to produce a diverse growth environment for a wide variety of plants. Vegetation varies from salt-tolerant shrubs and grasses which inhabit the lower valley bottoms, the sagebrush steppe and pinyon/juniper woodlands in the intermediate elevations, to limber pine and white fir forests in upper elevations. The boundary of these vegetation zones can be a gradual or abrupt change, depending on the extremities of the factors listed above.

The land pattern in Elko District is intermingled, with private lands usually associated with water features, and BLM administered lands usually dominated by uplands. A forty mile wide band of "checkerboard land" consisting of alternating federal and private sections traverses the entire district in an east/west direction. Mixed land ownership fosters a setting in which effective predator management by ADC requires coordination of actions on private and publicly owned lands.

C2. Scope of the Action

Although the proposed ADC IWDM program is local in its application, there are several public interest groups who have expressed strong interest in how it is carried out on public land in the Elko District.

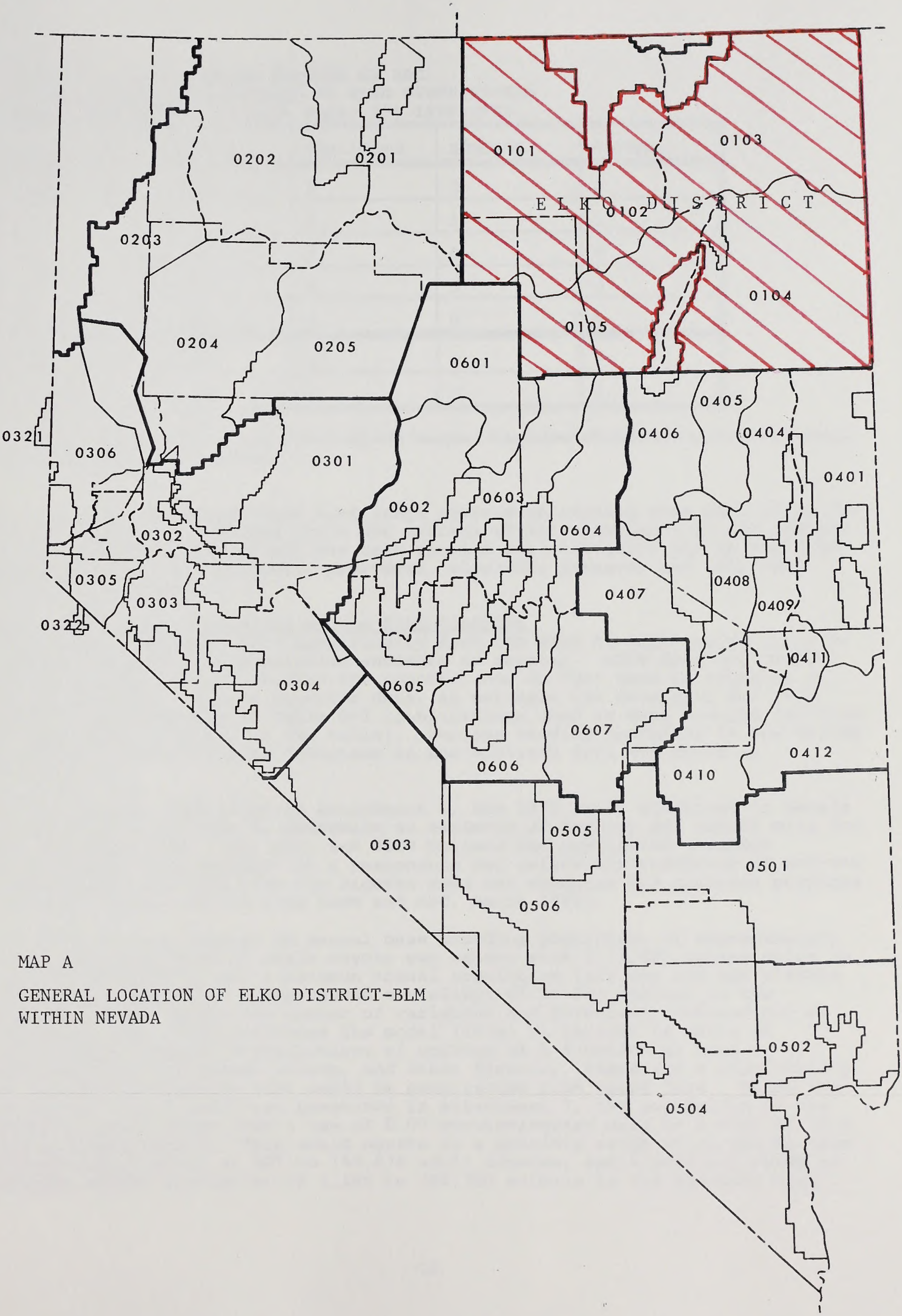
Based on BLM records, public lands historically open to authorized predator control by ADC, account for roughly 18 percent of the analysis area. In any given year, only a portion of this total acreage is actually influenced by control activities because of the limited ADC workforce, and not all cooperators request assistance every year.

C3. Wildlife

Although a wide variety of wildlife species are present in the analysis area, most would not be significantly impacted directly or indirectly by predator control programs, and therefore are not addressed in this EA. Target species in the Elko District-BLM involving ADC's operations are coyotes, mountain lions and occasionally bobcats, and ravens. Table C-1 shows the number of target species taken from fiscal year (Oct.1 through Sept. 30) 1990 through 1994.

Coyotes, the primary predators addressed in this EA, are opportunistic predators that feed on a wide variety of mammals, birds, insects, vegetation and carrion. They are normally associated with rangelands, but in several places outside of the analysis area the coyote is well established in urban environments. They have the ability to adapt and prosper in a variety of circumstances.

The State of Nevada classifies the coyote as a varmint, which means they are not a managed species. They can be killed at any time in unlimited numbers. A hunting license is not required to kill coyotes. A trapping license must be obtained if an individual sets traps, snares, or similar devices to take coyotes, or sells raw furs for profit. This regulatory status for the coyote reflects the state's desire to place high importance on protecting property owners from predatory or nuisance animals.



MAP A

GENERAL LOCATION OF ELKO DISTRICT-BLM
WITHIN NEVADA

Table C-1

NUMBER OF TARGET SPECIES REMOVED BY ADC ON PUBLIC LANDS ADMINISTERED BY ELKO DISTRICT-BLM FISCAL YEARS (Oct.1 through Sept. 30) 1990-1994

FISCAL YEAR	COYOTES	MTN LIONS	BOBCATS	RAVENS
1994*	338	6	0	0
1993	1,131	6	1	5
1992	1,183	5	0	0
1991	1,720	6	0	0
1990	1,511	6	0	0
TOTAL	5,883	29	1	5
AVERAGE	1,177	6	0	1

*During fiscal year 1994, ADC actions were conducted only under "emergency authorizations" with approval being on a case-by-case basis as need was demonstrated by loss occurrences.

It is a well documented fact that large numbers of coyotes have been killed to protect domestic livestock since the arrival of Euro-Americans in the western United States. This control has been carried out nationally and in the Elko District by private trappers, sportsmen, ranchers, farmers, and government trappers for decades.

Estimated Coyote Population of the Elko District

There are no research data specifically from the Elko District which could be used to build a local population estimate of coyotes. NDOW does not conduct any kind of population studies for coyotes, nor do they have an estimate of coyote numbers. Lacking specific data, an estimate was developed for this analysis as indicated in Table C-2 (publications used as data sources for this estimate are footnoted on the table). Various studies conducted in the United States to estimate coyote densities in the analysis area are shown in Attachment 7.

Of the studies identified in Attachment 7, the 1972 study conducted in Nevada by Alcorn was selected to determine an estimate of density per square mile for the analysis area. BLM, ADC, and NDOW believe the population estimate presented in this document is a reasonable and defensible synthesis of current information, and feel that the figures used are adequate for analysis purposes (personal communication with NDOW and ADC, March 1995).

The data derived suggest an annual base breeding population of approximately 11,527 adult coyotes (1 adult coyote per square mile X 11,527 square miles in the Elko District), and a maximum annual population (all sex and age classes before any natural or human caused mortality) of 26,953 animals in the analysis area. Given the number of variables and potential combinations of variables that could influence the model (local variations in rates of recruitment, unequal distributions of coyotes as a function of food availability, fur market values, and other factors), there are a wide variety of different scenarios that could be constructed from these data. Using the estimated coyote densities presented in Attachment 7, the population in the district could range from a low of 0.07 coyotes/square mile to a high of 14.3 coyotes/square mile. This would equate to a possible range of an annual base breeding population of 807 to 164,836 adult coyotes, and a possible range in maximum annual population of 1,185 to 385,720 animals in the analysis area.

Readers may calculate any number of situation analyses based on the figures provided. BLM did not feel it was necessary to go any further than to present some reasonable base figures for impact analysis. Costly research studies would have to be conducted in order to bring a resolution to this question in the analysis area. Neither ADC nor BLM would be able to fund such research in the foreseeable future given the tendency to look for reductions in federal spending.

Table C-2
COYOTE REPRODUCTION MODEL FOR ELKO DISTRICT-BLM

Resident Population Structure	Yearlings	Adults	Total
Population Age Structure	4,611	6,916	11,527
Number of Females	2,306	3,458	5,764
Percent Breeding	10%	70%	
Number of Breeding Females	230	2,421	2,651
Average Pups/Litter	4	6	
Pups Born	920	14,526	15,446
Maximum Annual Population	5,531	21,442	26,953
Mortality Rate	70%	40%	57%

Population density of one coyote per square mile based on Predator Damage in the West: A Study of Coyote Management Alternatives, 1978, U.S.F.W.S., for high desert, sagebrush ecosystem. Concurrence with this model was expressed by ADC, USDA Denver Wildlife Research Center and Nevada Division of Wildlife.

Population computations based on The Effects of Control on Coyote Populations, 1975, University of California, and Modeling the Utah Coyote Population--Notes, 1988, Denver Wildlife Research Center.

Elko District square miles based on public acres (7,377,400) divided by 640 acres/square mile which equals 11,527 square miles.

Nontarget animals include several mammalian species. Domestic dog (*Canis familiaris*), kit fox (*Vulpes macrotis*), badger (*Taxidea taxus*), and gray fox (*Urocyon cinereoargenteus*) occur in Elko District and could be accidentally taken by some types of IWDM activities (traps and M44's). The kit and gray foxes are listed as furbearers by NDOW. Red fox (*Vulpes vulpes*) is uncommon species in the district that potentially could be impacted by IWDM activities. Historically, capture of nontarget animals has been limited to a very small number of incidents to species that are abundant. In 1994, no nontarget species were captured by ADC on public lands administered by Elko District. During 1993, one nontarget bobcat was captured which was mortally injured and had to be destroyed. In 1992, one jackrabbit was destroyed; five nontarget bobcats and one badger were captured and released. In 1991, 1 vulture, 1 nontarget bobcat, and 1 mule deer that were inadvertently captured were released; 2 badgers had to be destroyed because of mortal injuries suffered during capture. During 1990, seven non-target animals were captured; four badgers were released, 1 badger and 2 porcupines were not in a condition to be released and had to be destroyed.

C4. Threatened, Endangered, or Candidate Species, and Raptors

The U.S. Fish and Wildlife Service (FWS) has stated, through informal consultation initiated by ADC (Attachment 8) pursuant to Section 7 of the Endangered Species Act of 1973 (ESA), as amended, the northern bald eagle (*Haliaeetus leucocephalus* - Endangered) "is the only listed species that could be affected by activities identified in the annual work plan." Bald eagles occur as winter residents in several areas of the district. There are no known breeding pairs nesting within the analysis area.

Additionally, the following species, which may be affected by the proposed action or alternatives, have been identified as occurring within the Elko District: kit fox (Category 2 Candidate), pygmy rabbit (*Brachylagus idahoensis* Category 2 Candidate), American peregrine falcon (*Falco peregrinus anatum* - Endangered), northern goshawk (*Accipiter gentilis* - Category 2 Candidate), and ferruginous hawk (*Buteo regalis* - Category 2 Candidate).

Formal consultation, as required under Section 7 of the ESA, on ADC's IWDM Program was completed by the FWS on July 28, 1992. The Biological Opinion states that bald eagles "may be taken as a result of both chemical and nonchemical methods of control," but these actions are not likely to jeopardize the continued existence of the species, as long as ADC personnel adhere to current restrictions.

Per policy defined in BLM Manual 6840, BLM is required to carry out management consistent with principles of multiple use, for the conservation of candidate species and their habitats and will ensure that actions authorized, funded, or carried out do not contribute to the need to list any species as threatened or endangered (T/E).

ADC has adopted a standard operating procedure which states they will comply with reasonable and prudent alternatives to avoid impacts to threatened or endangered species.

Seventeen species of raptors including the T/E and candidate species described above are potential nontarget animals.

C5. Wild Horses

Table C-3 shows wild horse herd areas which currently have a population of animals and fall partly or entirely within designated "primary control areas" as depicted on Map 1 of the proposed IWDM plan (Attachment 1).

Table C-3
ADC PRIMARY CONTROL AREAS WITHIN WILD HORSE HERD AREAS

WILD HORSE HERD AREAS	ESTIMATED WILD HORSE POPULATION	ACRES WITHIN HERD AREA	ADC PRIMARY CONTROL ACRES IN HERD AREA
Rock Creek	573	188,720	171,640
Owyhee	119	347,930	24,240
Diamond Hills	125	118,560	43,120
Maverick/Medicine	332	286,460	93,370
Goshute	160	250,800	67,200
Antelope Valley	240	463,540	159,250

C6. Livestock Grazing

One hundred seventy-five livestock permittees graze on allotments administered by the Elko District-BLM. Of this, nineteen are domestic sheep operators. These nineteen domestic sheep operators would be most directly affected by the proposed action or alternatives. Table C-4 portrays the numbers of sheep and amount of associated grazing on the Elko District for the period 1990-1994. Table C-5 shows the livestock losses reported by ADC on BLM allotments for the period 1990-1994.

Table C-4
DOMESTIC SHEEP GRAZING ON ELKO DISTRICT-BLM 1990-1994

YEAR	NO. OF DOMESTIC SHEEP	NO. OF AUM'S*
1994	52,264	24,717
1993	61,683	27,861
1992	48,889	25,552
1991	63,770	40,369
1990	68,296	37,227
AVERAGE	58,980	31,145

* An AUM (animal unit month) is the amount of forage required by five adult sheep for one month.

Table C-5
ADC REPORTED DEPREDATION LOSSES
ON PUBLIC LANDS ADMINISTERED BY ELKO DISTRICT-BLM
FISCAL YEARS (Oct. 1 through Sept. 30) 1990-1994

FISCAL YEAR	NO. of REQUESTS	EWES / LAMBS / CALVES	TOTAL VALUE ($)*
1994**	149	163 / 287 / 0	31,337
1993	137	91 / 462 / 0	39,007
199[illegible]	57	51 / 176 / 0	13,103
1991	97	104 / 414 / 13	36,615
1990	149	96 / 201 / 18	22,088
5 YR. TOTAL	544	505 / 1,540 / 31	142,150
AVERAGE	109	101 / 308 / 6	28,430

* Dollar values are derived by multiplying the animal losses times the value of the type of animal as identified in Nevada Agricultural Statistics published for the year in which the loss occurred.

** During fiscal year 1994, ADC actions were conducted only under "emergency authorizations" with approval being on a case-by-case basis as need was demonstrated by loss occurrences.

The majority of cattle ranchers using the public land in the district are running cow-calf operations, while some operate steer operations, depending on current market prices. Most cattle ranchers in the district follow a year-long breeding program. Some operators breed in the early summer with subsequent calving in late winter and early spring. Most operators brand in the spring and sell their calves in the winter and spring.

Most sheep operations graze on or trail through several allotments; while most cattle operations graze within only one or two allotments. Sheep ranchers in the district follow a seasonal breeding program rather than the yearlong breeding in cattle operations. The time frames for breeding ewes usually depends on the type of lambing method. Most sheep operations in the district lamb on the range but some are starting to convert to shed lambing. For range lambing, the rams are usually put with the ewes during November or December, depending on the facilities the operator has for lambing. For shed lambing, the rams are put with the ewes after the lambs are weaned in August. Most lambing is scheduled to take advantage of abundant forage during the period between lambing and weaning. If range ewes are lambed without sheds it is more desirable to have the lambs born in April and early May. If sheds are available, lambs may be born in February and March.

Lambs are weaned in late August, September, or early October, at which time the sheep are trailed back to the ranch or corralled on the range for separation of market lambs for sale. The ewes are then usually put back onto the range since the majority of the sheep operators have year-round grazing permits. When sheep are off the public rangeland they are kept on private pastures. Lamb crops can exceed 100 percent since the incidence of twins in sheep is quite high. Bands usually average 1,000 to 1,200 head of sheep per band. Table C-6 portrays the approximate livestock use (primarily sheep) where ADC actions occurred in FY 1994.

Table C-6
APPROXIMATE LIVESTOCK USE WHERE ADC ACTIONS OCCURRED DURING FY 1994

Allotment Name	Livestock # & Class	Begin Period	End Period
Whitehorse	2,200 sheep	11/22/93	04/15/94
Badlands	2,450 sheep	12/21/93	03/10/94
Ferber Flat	1,422 sheep	11/10/93	04/20/93
Boone Springs	4,755 sheep	12/16/93	03/19/94
Utah/Nevada #1 North	1,480 sheep	11/26/93	04/30/94
Salmon River	2,110 sheep	05/15/94	09/21/94
	1,168 cattle	04/25/94	12/02/94
Hubbard Vineyard	1,128 cattle	04/01/94	12/25/94
	50 horses	04/01/94	12/31/94
West Cherry Crk.	1,361 sheep	05/16/94	10/19/94
	226 cattle	04/20/94	11/30/94
Double Mountain	4,100 sheep	04/25/94	06/01/94
Devils Gate	1,100 sheep	05/08/94	09/24/94
Beaver Creek	1,100 sheep	06/18/94	09/18/94
Red Rock/Browne	4,000 sheep	10/29/93	11/10/93
	2,400 sheep	04/28/94	07/10/94
Rock Creek (Spanish Ranch)	3,024 cattle	10/01/93	11/20/93
	4,075 cattle	03/25/94	09/30/94
	1,600 sheep	10/20/93	10/24/93
	1,650 sheep	06/15/94	09/30/94
(Squaw Valley)	2,716 cattle	10/01/03	11/30/93
	2,930 cattle	03/16/94	09/30/94
	8,000 sheep	10/21/93	11/13/93
	8,720 sheep	04/08/94	09/30/94
North Four Mile	392 cattle	05/01/94	10/31/94
Stag Mountain	1,100 sheep	05/24/94	09/18/94

Knowlton et al (1977) state that they are not aware of any place in the Great Basin where livestock serves as a dietary staple for any of the major carnivore populations, although individuals may feed extensively on them for a period of time. They go on to state that livestock may temporarily flood the food base in particular locales, encouraging "prey-switching" among opportunistic feeders. They also state that "although any of the large carnivores are capable of killing livestock, especially sheep, it is clear that many do not." This statement is supported by pen studies conducted by other researchers which have shown that only 70 percent of wild-caught coyotes can reasonably be "trained" to kill sheep even though they are deprived of food (Connolly et al 1976; U.S. Fish and Wildlife Service 1978).

In an effort to help resolve conflicting claims about the severity of predator losses to the sheep industry, Tigner and Larson (1977) examined 4,440 dead sheep on several ranches in southern Wyoming from April 1973 through December 1975. Approximately 6,000 ewes and their lambs were monitored each year. Grazing occurred on separate winter and summer ranges, on large tracts of public land, and on rangeland dominated by big sagebrush (similar to conditions found in the Elko District). The majority of the ranchers used herders (one ranch used herders only in the summer) to tend the herd and they lambed on the range rather than in sheds. Herders were the only nonlethal method of control mentioned in the research paper. Various types and intensities of predator control were utilized for all herds throughout the study. Each dead sheep was necropsied on the site and the cause of death was determined if possible. The study concluded that exposure, starvation, accidents, and disease accounted for a large percentage of the death loss. Known predator kills (coyotes 77%; black bears 11%; and golden eagles 9%) were only 0.2% of the ewes each year and 1.5%, 2.1%, and 3.2%, respectively, of the lambs from the study herds. They cited four other studies Davenport et al (1973), Nielson and Curle (1970), Nesse (1974), and Nass (1975), which reported similar percentages of sheep lost to predators. Predator control was also in effect during these studies.

Losses of livestock to predators occur primarily during spring when lambs and calves are very young and most vulnerable to predation. These losses may occur on private and/or public lands. The land ownership pattern of private and public lands in the analysis area is often intermingled in such a way that there is a high likelihood that predators living on public land can easily gain access to private land and kill, injure, or harass livestock. This is the reason why private land owners who do not have public land grazing permits, periodically ask for assistance from ADC on public lands.

Public land lambing/calving is not a guaranteed element of the annual BLM grazing authorization process. Lambing/calving on public land increases the likelihood that producers may suffer lamb/calf losses to coyotes since herd supervision may be more difficult compared to private fenced quarters. Records do not indicate the extent to which ADC has provided assistance to cooperators where public land lambing/calving has been practiced. Public land use offers an advantage to producers in the spring in that it is less likely to harbor livestock diseases and is frequently much drier which increases the chances for newborn lamb/calf survival during the first few weeks of life. The majority of lambing/calving occurs during late winter and spring. This practice may, as a consequence, be placing some producers in more jeopardy to coyote predation for other resource reasons.

C7. Recreation

Recreation use in the Elko District is dispersed and most occurs in the back country. Recreation opportunities include hunting for upland game and big game, fishing, sightseeing, hiking, trapping, camping, and off-road vehicle use. Use is usually not concentrated in any specific area, with the exception of the following: There are several popular recreation areas which are designated as "no control areas/public safety zones" (see Map 1 in the proposed IWDM plan, Attachment 1) - Wilson, Wild Horse, Willow Creek, Zunino, Dorsey, and South Fork Reservoirs; Marys and Salmon Falls Rivers; Tabor Creek; and Blue Lakes.

C8. Wilderness Study Areas

Table C-7 depicts the ten wilderness study areas (WSA's) that exist on the Elko District-BLM. See Maps 3A through H in the proposed IWDM plan, (Attachment 1) for location of these WSA's.

Table C-7
WILDERNESS STUDY AREAS IN ELKO DISTRICT-BLM

WSA NAME	WSA NUMBER	ACREAGE
Bluebell	NV-010-027	55,665
Goshute Peak	NV-010-033	69,770
South Pequop	NV-010-035	41,090
Bad Lands	NV-010-184	9,426
Cedar Ridge	NV-010-088	10,009
Red Spring	NV-010-091	7,847
Little Humboldt	NV-010-132	42,213
Rough Hills	NV-010-151	6,685
S.F. Owyhee R.	NV-010-103A	7,842
Owyhee Canyon	NV-010-106	21,875
TOTAL	10 WSAs	272,422 acres

The Interim Management Policy and Guidelines for Lands under Wilderness Review (IMP) dated December 12, 1979, revised July 12, 1983, was placed into BLM Handbook format November 10, 1987 (H-8550-1). This document provides the conceptual framework and specific policy for managing public lands which are under wilderness review. The WSA guidelines prohibit preventive control by including the following restriction: "Animal damage control activities directed at individual offending animals may be permitted, as long as this will not jeopardize the continued presence of any species."

C9. Firewood Harvesting

Twelve community firewood harvesting areas depicted on Maps 2A-L in the proposed IWDM plan (Attachment 1), are established on the District. These areas and a one-half mile buffer are designated as "no control areas/public safety zones" in the proposed IWDM plan.

D. ENVIRONMENTAL CONSEQUENCES

Under all alternatives the IMP guidelines would apply. Adherence to these guidelines would insure conformance with the wilderness study area non-impairment criteria as described in the Proposed Action and alternatives.

D1. Impacts of the Proposed Action

The primary concern, which is of utmost importance, is the health and safety of humans and domestic animals directly affected by IWDM activities. Adverse impacts could result from accidental exposure to mechanical devices such as leghold traps or snares, and chemical toxicants such as the sodium cyanide used in M-44's. All current methods of predator control have been used by ADC personnel for many years throughout the west with relatively few injuries to humans, domestic dogs, or livestock. Exceptions include: (1) human fatalities or injuries to participating ADC personnel involved in low level aerial gunning (none have occurred in Nevada); (2) the inadvertent capture of nontarget species such as dogs, livestock (especially sheep), and other species of wildlife in leghold traps; and (3) loss of domestic dogs and other nontarget species to M-44's.

All depredation control methods are hazardous when improperly used. However, when used by trained personnel following established guidelines, the risks to humans and domestic animals are low. Special considerations such as "no control areas/public safety zones" or seasonal limitations are included in the Proposed Action to minimize the impacts and risks to the public and their pets by diminishing or eliminating possible contact with control apparatus.

Wildlife
An additional concern would be the anticipated impacts on the overall populations of target and nontarget species. Anticipated impacts from the control effort on target and nontarget species, including ecological implications, must be related to their effects on the overall populations. It is the integrity of the population that is important biologically. Another important consideration is the amount of pain and suffering that is experienced by the individual animal as a result of IWDM activities.

Coyote - Coyote populations, as well as many other wildlife species, have the reproductive capacity to recover rapidly following a reduction in number, regardless of whether these reductions result from natural causes or man's activities. According to a mathematical model developed to simulate coyote population dynamics, tests of varying levels of control, showed that if 75 percent of a coyote population was killed each year, it would take slightly over 50 years to exterminate the population (Connolly and Longhurst, 1975). Connelly and Longhurst go on to say that "killing coyotes at rates below 75 percent may merely stimulate reproduction and aggravate the problem by increasing the seasonal population pressure on the food supply."

Some coyote population controlling mechanisms, particularly their reproductive responses to lethal control efforts, are a source of professional differences of opinion among researchers. The reproductive response of coyotes as a consequence of human control or lack of human control has been described within technical and unpublished literature by several different research authors, including Guy Connolly, Fred Knowlton, and Bob Crabtree. The essence of some of these papers which characterize two views of coyote population responses, and why lethal versus nonlethal means is an issue, follow. Some items of agreement from both schools of thought are also indicated.

* Crabtree and Ables (1988) and Frank (1979) report that if a coyote population is subjected to substantial exploitation, neither its social organization nor population dynamics will be remotely representative of the natural, and therefore evolutionary significant, situation.

* Studies in Texas have shown that coyote litter sizes vary in response to control efforts. For example, in light control situations, the litter size was between 2.8 to 4.2 pups per female, and where control was intensive, the litter size ranged between 6.2 and 8.9 pups per female. In another area subject to predator control, coyotes began breeding at less than a year old and often produced litters of eight to ten pups (Knowlton 1972, 1989; Connolly 1978).

* Studies conducted in Washington and Yellowstone National Park show that successful breeding for females in stable unexploited populations occurred at ages two through six, and produce small litters of roughly four pups per territory, of which an average of 1.6 to 1.9 survive (Crabtree et al, 1988; Crabtree and Ables, 1988; Crabtree 1992).

* Among lightly exploited populations, typically about 60% are under one year of age and over 80% are under three years old (Knowlton 1972 and 1989).

* In an unexploited population, approximately 25% are under one year old and less than 60% are under three years (Crabtree and Ables 1988; Crabtree 1992).

* Connolly and Longhurst (1975) and Knowlton (1972) concur; the greatest potential for increased reproduction in a coyote population lies with the yearling age class. It follows that an exploited population with a higher percentage of yearling animals, compared to an unexploited population, would have a greater reproductive capability.

These data support the contention that the coyote's biological response to control is one that elevates recruitment rates and tends to compensate for losses suffered within the local population. Furthermore, emigration from adjoining populations takes place over time which also contributes to the coyote population recovery following control efforts. There is agreement on these points by the researchers.

However, based on the findings in Washington and Yellowstone Park, Crabtree and other persons have concluded that exploited populations with a higher percentage of yearling animals would have a greater reproductive capability and higher food demand compared to similar unexploited populations. This would tend to foster more opportunities for depredation situations that producers must contend with to protect their resources. Herein lies a potential problem for lethal control advocates; taking such measures may in fact be stimulating coyote productivity and generating the need for more subsequent control.

This view of the coyote control issue is an argument for substantially using nonlethal control means in order to avoid stimulating coyote productivity and its negative side effects for livestock producers. Taken in this context, generalized lethal controls (taking offenders and non-offenders alike) may be viewed as short term solutions to the problem. Depredations may continually arise under the traditional approaches of significant reliance upon trapping, gunning, and snaring, and in the absence of the use of animal husbandry and behavior modification actions. Mr. Crabtree also contends that over time, trapping and gunning actions tend to result in a higher number of wary coyotes capable of avoiding traps and so on. Under this scenario, producers increasingly contend with more efficient and trap shy local coyote populations that are adapting to control efforts.

According to the Vale, Oregon ADC-EA (# OR-03-92-14) prepared in April 1993, in an environment where lethal controls were replaced with only nonlethal controls, Mr. Crabtree indicated that he would expect changes in coyote population structures and predatory behavior towards livestock to take 5 to 10 years or more to occur. Management of this sort can be viewed as a long-term solution to predation situations for producers which could substantially reduce the need for trapping, gunning, and so on. He also stated that he did not know of any research data where lowered coyote productivity was documented following the cessation of lethal controls and replacement with totally nonlethal control methods.

The Vale District BLM (EA# OR-03-92-14) consulted with Guy Connolly as a technical expert to allow him to explain exactly what management conclusion could be drawn from his research findings and if the quote from his 1975 research is somehow taken out of context. The following written response was given:

> "In reality, the Connolly-Longhurst model shows that these efforts (by ADC) produce only minor changes in coyote numbers, changes so small as to be undetectable in any but the most intensively monitored populations. Even though litter size changes with exploitation, the number of breeding females remains nearly constant at all levels of exploitation below 70%. Thus the number of coyote pairs killing to feed pups does not change significantly from light to moderate to heavy levels of exploitation. Coyote removal in the model did not increase the number of breeding females, but did decrease the breeding population which is the population preying on sheep in the springtime when lambs are most vulnerable.

> The primary application of the Connolly-Longhurst model to control situations such as the Vale District is to elucidate the mechanisms at work to ensure that the coyote population is not endangered by any practicable level of control effort. Coyotes removed in the vicinity of sheep flocks will be replaced after a time by other coyotes, but the relief gained from depredations can be substantial. As stated by Connolly and Longhurst (1975:31) 'If, as we believe, the existing program removes predators from problem areas without significantly influencing overall coyote numbers, it may be considered to serve the interests of both ranchers and preservationists.'
>
> No field study has shown predator control to actually increase the level of sheep losses to predators."

Conversely, "preservationists" and other researchers would argue that all coyotes do not kill sheep. Therefore, the removal of all predators or non-offenders from problem areas would not serve their interests.

Guy Connolly also stated that research shows there is a high pup mortality rate associated with coyote litters raised by young adult coyote pairs which tends to diminish the overall impacts of increased recruitment levels in exploited populations.

During a personal interview with Vale BLM (EA# OR-03-92-14), Fred Knowlton suggested that even though recruitment in exploited populations may be elevated, the population reduction following control, compensates for this effect and therefore substantially higher total coyote numbers are not the end result of lethal controls. Mr. Knowlton further indicated that the research on coyote litter size he worked on was based on examining placental scars in breeding female coyotes. This data has some limitations in that there is no proof that all of the coyotes which might be produced, as indicated by placental scars, survive and become part of the coyote community requiring food and potentially posing problems for producers. In Mr. Knowlton's opinion the net effects of this mechanism are not fully documented.

All three researchers contacted by the Vale BLM (EA# OR-03-92-14) agreed that denning (destroying pups at the den site) removes the strong instinct for adults to seek livestock as a food source which creates problems for producers. Leaving even one pup at the den site will apparently drive adults to continue to pursue food quantities necessary to rear a normal sized litter. Several studies have shown that when researchers removed pups from dens but left the adults, predation on sheep dropped by more than 90 percent (Knowlton 1989; Till and Knowlton 1983; Anderson 1969).

A 1990 General Accounting Office paper gives a national perspective on predator control and reported the following:

* Animal damage control activities conducted by ADC are not threatening District or Statewide predator populations. ADC generally takes a small percentage of a total predator population.

* The number of predators killed by commercial trapping, hunting, and poaching far exceed those killed by ADC.

* ADC activities occur on only a small percentage of the predators' total available habitat.

NDOW compiles statistics for sport fur harvest by Region. NDOW Region II is comprised of Elko, Eureka, Lander, and White Pine Counties. Table D-1 depicts coyote sport harvest figures for Region II from Nevada Upland Game, Furbearer, Mountain Lion, and Migratory Game Birds; Status and Hunting Season Recommendations published annually by NDOW.

Table D-1
NEVADA DIVISION OF WILDLIFE-REGION II COYOTE SPORT HARVEST

Year	Coyotes Harvested	Average Value/Fur
1993-94	2,342	$21.06
1992-93	1,689	$18.69
1991-92	1,736	$21.[illegible]6
1990-91	441	$13.02
1989-90	449	$10.77
TOTAL	6,657	
AVERAGE	1,331	$17.58

Elko District-BLM comprises roughly 40% of Nevada Division of Wildlife's Region II. The sport harvest of coyotes in Region II has averaged 1,331 animals annually over the past five years. This equates to an approximate sport fur harvest of 532 (.4 X 1,331) coyotes per year or 1.9% of the total maximum population (26,953 coyotes from the coyote reproduction model portrayed in Table C-2) in the Elko District. The value of a coyote fur has fluctuated in price from $10.77 in 1989-90 to $24.36 in 1991-92, for an average of $17.58 over the past five year period (Table D-1).

Using information shown on Table C-1, the average coyote take from ADC's operations on public land in Elko District is 1,177 animals per year or 4.4% of the total maximum population. ADC take combined with sport harvest equates to roughly 6.3 % of the annual total population of coyotes or 14.8% of the adult base population estimated to inhabit Elko District (Table D-2). This level is far below what Connolly and Longhurst (1975) stated would be necessary to eliminate coyotes from an area, which is an annual coyote take of 75% of the population for 50 years.

Table D-2
TOTAL HUMAN CAUSED MORTALITY BREAKDOWN
ADC & NON-ADC ACTIONS ON PUBLIC LANDS ADMINISTERED BY ELKO DISTRICT-BLM
AVERAGES OF TAKE FROM 1990 THROUGH 1994

TYPE OF MORTALITY	NUMBER OF COYOTES	% OF POPULATION
ADC Control Actions	1,177	4.4
Non-ADC Actions	532	1.9
Total Human Caused Mortality	1,709	6.3

Even assuming that the total take data used are off by a factor of two (12.6%) or that there are actually 50% fewer coyotes (13,477 total coyote population), it is still reasonable for BLM to conclude that coyote populations are not being jeopardized in the analysis area as a consequence of ADC's control actions.

Table D-3 depicts the percentage of the type of control on coyotes on Elko District-BLM, based on available detailed records provided by ADC for fiscal years 1994, 1993, and 1992.

Table D-3
PERCENT COYOTE TAKE BY CONTROL METHOD USED BY ADC DURING FISCAL YEARS 1992, 1993, & 1994 ON ELKO DISTRICT-BLM

CONTROL METHOD	PERCENTAGE
Aircraft Gunning	62
Ground Shooting	15
Snaring	1
Trapping	18
Denning	4

The M-44 is considered by some to be a more humane method of controlling coyotes than trapping since the coyote dies approximately 40 seconds after exposure. Sodium cyanide is propelled into the coyote's mouth and reacts with moisture to form hydrogen cyanide gas. This gas combines more readily with the blood's hemoglobin than oxygen. With no oxygen circulating in the coyote's blood stream, it will suffocate. Based upon the results of the previous five years where no M-44s have been used, because control situations are expected to be similar, it is unlikely that this method would be used to control coyotes to any extent on Elko District.

Shooting and denning can be a means of humane disposal if administered properly. Using the values in Table D-2 and C-1 over the five years of the Proposed Action, it is expected that ADC would control approximately 875 coyotes through shooting from ground methods and 233 coyotes through denning on public lands administered by Elko District-BLM.

According to ADC Directive 2.450 (Attachment 11), all traps and trapping devices are to be checked as frequently as possible and no less frequently than required by State law. According to State law (Nevada Revised Statute, Section 503.570, Part 2) employees of the USDA are not required to visit traps, snares or similar devices, and remove captured animals. Therefore, coyotes caught in steel leghold traps or similar devices, could remain trapped until death occurs from dehydration, starvation, exposure to the elements, trauma and/or injuries, or humane disposal by an ADC technician. It is questionable that few if any animals would survive after several days in a trap without food, water, or protection from the elements. The survival of juvenile animals, dependent on a female constrained in a trap, is also doubtful. Any person not employed by the Nevada Division of Agriculture or ADC is required to visit their traps at least once every 96 hours (Nevada Revised Statute, Section 503.570, Part 1). Using the values in Table D-2 and C-1, over the five years of the proposed action, it is expected that approximately 1,108 coyotes would be trapped or snared by ADC from public lands administered by Elko District-BLM.

Aerial gunning is the primary tool (62%) used in ADC predator control activities . Aerial gunning is currently used as both a preventive method of control and in response to specific livestock losses. Aerial gunning is species specific (it is only directed at coyotes). This type of control measure normally covers large expanses of land in a short period of time and therefore has the potential to result in the take of many animals, some of which may not be "offenders". However, areas hunted are historic problem areas or areas with an ongoing damage situation. Using the values in Table D-2 and C-1, over the five years of the proposed action, it is expected that approximately 3,616 coyotes would be removed by ADC through aerial gunning from public lands administered by Elko District-BLM.

Mountain Lion - The mountain lion is a low density predator of secretive nature whose characteristics and life cycle make it very difficult to monitor. The estimated annual recruitment rate for lion populations in Nevada is believed to be about 30% (Ashman, et al, 1983). The rate of kitten survival is good (approximately 1.8/female) and when coupled with the lions' high reproductive potential (average one litter every 18 months) it can be speculated that mountain lions are capable of rapidly replacing individuals that are removed from the population (Ashman, et al, 1983).

Mountain lions are classified as a big game species in Nevada. As such mountain lion take by sport harvest is regulated through a tag quota system. When harvest levels are achieved, no further tags are issued. The harvest of mountain lions through IWDM activities are taken in to account when sport harvest objectives are set. Mountain lion populations appear to be stable in Elko, (NDOW, 1994). Historically and as proposed, IWDM control efforts towards mountain lions are directed at specific problem animals. Six mountain lions were removed through IWDM efforts from public lands on the Elko District during October 1, 1993 through September 30, 1994. Sport harvest for mountain lions for this same time period on Elko BLM was 31 animals. NDOW harvest objectives (combined sport and depredation) are to harvest 20 to 30 percent of the annual population of mountain lions. A rough estimate of the mountain lions that occupy the Elko District during sometime of the year would be 90 to 135 lions.

Six animals removed by ADC represents 4.5 to 6.7 percent of the annual mountain lion base population (not including recruitment) occupying Elko District. Over the last five years, on average six mountain lions annually have been removed through ADC control. At this rate, over the life of the five year plan, approximately 30 mountain lions would be removed.

The preferred method of take for mountain lions is to utilize trained dogs to track offending animals. The dogs pursue the lion until it seeks refuge in a tree or rock pile and the animal is shot. The animal experiences minor suffering if the bullet is properly placed.

Bobcat - Anticipated impacts are almost non-existent with respect to this species. IWDM measures are seldom taken on bobcats and are always aimed at a particular animal. During the five year period FY 1990 through FY 1994, one target bobcat was removed from Elko District-BLM through ADC's actions in 1993. During that same time period, six nontarget bobcats were captured. Five of these were capable of self maintenance and were released, one suffered mortal injury and was destroyed. Over the five years of the Proposed Action, impacts to bobcats are expected to be similar to the past five years, with essentially no impact occurring to the bobcat population as a whole.

Ravens - From 1990 through 1994, five ravens were taken by ADC on Elko District-BLM. Ravens can be a problem on sheep lambing areas for limited periods. Little or no impact to ravens are expected under the Proposed Action.

Other Wildlife - Other wildlife can be inadvertently captured through IWDM activities. ADC field personnel are required to use pan tension devices on all leghold traps. Four pounds of pressure are required to close these traps. The probability of capturing small nontarget animals is significantly lessened compared to traps without such devices. To encourage self maintenance, only off-set jaw traps which reduce limb damage are used. It is ADC policy to release inadvertently captured nontarget animals on site unless they are determined to have suffered mortal injuries. ADC field personnel devote substantial effort to minimize nontarget captures through careful selection of trap set sites and by developing and using selective lures.

Most if not all nontarget animals are caught in steel leghold traps or snares. Current Nevada regulations require a 3/16 inch spacer between the trap jaws when closed. Because ADC personnel are exempt from 96 hour trap checking through Nevada State law, nontarget species could also remain in traps and/or snares indefinitely. Death may occur from dehydration, starvation, exposure to the elements, trauma and/or injuries, or humane disposal by an ADC technician. All nontarget species are released on site unless they have suffered mortal injuries. It is questionable that few if any animals would survive after several days in a trap without food, water, or protection from the elements. If they did survive to be released, it is doubtful they would endure in such a weakened condition. The survival of juvenile animals, dependent on a female constrained in a trap for several days, is also doubtful.

Historically, overall effects of IWDM upon nontarget animals has been limited to very few incidents with species that are common. From FY 1990 through 1994, 13 non-target animals other than bobcats were captured; 7 of these were released (5 badgers, 1 mule deer, 1 vulture); 6 had to be destroyed (3 badgers, 2 porcupines, 1 jackrabbit). The impacts of the Proposed Action to nontarget species is expected to be similar to that experienced during FY 1990 through 1994. It is believed that this incidental take would not have any affect on the overall persistence of these species.

Poisoning of blackbirds, vultures, crows, and magpies could result from the use of DRC-1339 to control raven depredations. Larsen and Dietrich (1970) indicated that DRC-1339 is an effective toxicant for the avian family Corvidae which includes jays, magpies, crows, and ravens. It is unknown if the delivery mechanism (eggs) is an attractant to blackbirds and vultures. Larsen and Dietrich reported that crows are considerably more susceptible to DRC-1339 than are ravens. Test results with golden eagles suggested that ingestion of DRC-1339 treated baits would not cause mortality.

Populations of rodents and lagomorphs are minimally affected by coyote control methods used by ADC. The most significant impact upon these species probably occurs indirectly as a result of changes within complex coyote/prey relationships.

Low-flying helicopters or fixed-wing aircraft utilized in the aerial gunning of predators may also have an indirect affect on other species of wildlife, such as mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), bighorn sheep (*Ovis canadensis*), chukar partridge (*Alectoris graeca*), Hungarian partridge (*Perdix perdix*), and sage grouse (*Centrocercus urophasianus*). Aerial operations conducted during the spring months could be detrimental to the post-natal survival of localized segments of the populations or, when carried out during the winter season, cause additional physiological stress to animals already stressed from harsh weather conditions. It is difficult to quantify the potential impacts of aerial operations to these species. ADC personnel spent 426 hours in FY 1992, 289 hours in FY 1993, and 236 hours in FY 1994 in control efforts involving aircraft on public lands administered by Elko District. ADC operations may be beneficial to young or susceptible individuals of the population of these same species, by reducing predation.

Results of a study conducted in a sagebrush area in northwestern Utah, suggest that predation by coyotes is a major force in determining long-term mean blacktail jackrabbit densities, as well as a major force in determining the form and magnitude of the jackrabbit cycle (Gross et al 1974; Stoddart 1977). Food habit studies conducted by Wagner and Stoddart (1972) and population estimates of raptors and other carnivores in that area indicate that the effects on jackrabbit populations by raptors and other carnivores is minor. As jackrabbit populations increase, highly palatable vegetation preferred by livestock and pronghorn would probably decrease (Vorhies and Taylor 1933; Westoby 1973; Knowlton et al 1977). Knowlton et al (1977) suggest that if relieved of predation pressure, jackrabbits would probably increase, amplify pressure on the vegetation, and eventually alter its composition to the detriment of themselves as well as livestock and pronghorn.

Threatened, Endangered, or Candidate Species, and Raptors
Raptors can be affected by certain capture techniques. The leghold trap and M-44 are probably of most concern, unless the strict guidelines in effect are closely followed. Raptors locate their food primarily by sight, not smell. Leghold traps set for coyotes are normally baited with scents, and therefore do not constitute a hazard to these birds. Current Nevada regulations require a 3/16 inch spacer in trap jaws to protect raptors. Sight baits are currently outlawed, eliminating another potential problem, as raptors would not be attracted just to scents. ADC personnel follow these guidelines.
IWDM trapping and M-44 activities as proposed are not expected to adversely affect raptors including endangered bald eagle or peregrine falcon.

Low-flying helicopters or fixed-wing aircraft utilized in the aerial gunning of predators by ADC may have an affect on nesting raptors. The amount of disturbance would be governed by the number of close passes made by the aircraft or the amount of time spent hovering near the perch or nest site (personal communication, Dr. Richard Olendorff, July 1992). In a report on the use of rotor-wing aircraft in raptor surveys, White and Sherrod (1973) indicated falcons and eagles will sometimes attack aircraft that are hovering or flying close to their nest. This could present a problem to both the birds and the aircraft occupants should they come in contact with each other. Olendorff (former Leader of Technical Assistance at the Raptor Research and Technical Assistance Center, Boise, Idaho) believed that a minimum distance of ¼ mile should be maintained between aircraft and raptor nests (personal communication, July 1992). The time period most critical for the successful nesting and brood rearing of most raptor species nesting in the Elko District is February 1 to August 1. No active nests of bald eagle or peregrine falcon are known to occur on public lands administered by Elko District.

On June 12, 1992, ADC informally consulted with the Nevada State Office of the Fish and Wildlife Service regarding possible impacts to listed threatened, endangered, or candidate plant or animal species from the control activities and methods proposed in this plan. The consultation concluded that IWDM activities outlined in this plan would not adversely affect any federally listed threatened or endangered species within the Elko District. On July 28, 1992, formal consultation with Fish and Wildlife Service was completed on all of the different methods used by ADC throughout the United States with respect for all listed species. The biological opinion regarding the species that occur in the Elko District, expressed concern primarily with the use of strychnine and secondary poisoning by consumption of target animals by non-target animals. Strychnine is not proposed as a control method in the proposed action, therefore no adverse impact is expected to listed threatened or endangered species.

As stated earlier in section C4. of this document, the FWS has determined that bald eagles may be taken as a result of both chemical and nonchemical methods of control utilized by ADC, but these actions are not likely to jeopardize the continued existence of the species. It further states that in all bald eagle recovery units (except the Southwest), "the above ground use of strychnine is not likely to jeopardize the continued existence of this species," as long as ADC personnel follow current label restrictions. ADC currently restricts normal program use of strychnine to field rodent and nuisance bird control efforts. Strychnine is not used as a predacide/rodenticide except in emergency situations involving human health and safety. In 1988, all aboveground uses of strychnine were temporarily canceled. ADC nontarget kill records indicate that no bald eagles have been taken by any program use of strychnine during the past five years in the U.S.

The FWS has determined that a reasonable and prudent measure necessary and appropriate to minimize incidental take of the bald eagle would be to prohibit the use of strychnine within five miles of an active nest, active winter or summer roost, or hack site. Strychnine is not a control measure for IWDM activities under the Proposed Action. If under an emergency situation, such as controlling rodents for bubonic plague, strychnine would be proposed, then the reasonable and prudent measure would be imposed to reduce the risk of any impact to bald eagles.

In order to be exempt from the prohibitions of Section 9 of the ESA, FWS states "Leghold traps (except those used to trap mountain lions) shall be placed a minimum of 30 feet from above ground bait sets." ADC policy and state law require a minimum of 30 feet separation from above ground baits.

Impacts to the ferruginous hawk would be minimal. This hawk's primary prey are jackrabbits and Townsend ground squirrels (*Spermophilus townsendii*) (Olendorff 1993). These are also prey species of the coyote. If coyote levels were reduced in areas adjacent to ferruginous hawk nest sites, lethal coyote control could have a slightly beneficial effect by reducing competition for prey species, with more prey becoming available to the hawks. This could be said for all nesting raptors, regardless of prey species. This potential impact has never been measured.

Impacts to the northern goshawk are also expected to be minimal. Mammals appear to be the most important food group for goshawks, with the Belding ground squirrel (*Spermophilus beldingi*), the golden mantled ground squirrel (*Spermophilus lateralis*), and the cottontail rabbit (*Sylvilagus nuttallii*) being the most common prey items. The same beneficial impacts associated with the ferruginous hawk could be realized by the goshawk.

Based on ADC records and what is known about nontarget captures of lagomorphs and small canids, no pygmy rabbits or kit foxes are expected to be injured or killed from the proposed IWDM operations. A slightly beneficial impact to pygmy rabbits and kit foxes, which are both prey items of coyotes, could be realized by ADC's control efforts which would reduce predation.

Wild Horses

Aerial gunning of predators in close proximity to wild horse herds could cause disturbance and displacement of the animals. There could be detrimental impacts if aerial gunning was conducted during the foaling season (March 1 through June 30) by causing abortions and/or leppying of foals. This could cause death to foals and possibly some mares. BLM policy prohibits low level flying with any aircraft below 500 feet above ground level during this time period in any herd use area presently occupied by wild horses (Nevada State Office Instruction Memorandum No. NV-85-272). Assuming equal distribution throughout a herd area, using data in Table C-3, eight hundred wild horses potentially inhabit the primary control areas identified on Map 1 of the proposed IWDM plan (Attachment 1). It is not possible to quantify how many may be subjected to low level flying by ADC that would cause death to foals or mares.

Livestock Grazing

The majority of IWDM control occurs in Elko County within the Elko District-BLM. County-wide, agriculture produces 3.6 percent of total income and provides 5.6 percent of the jobs. However, agriculture is of relatively higher significance in the more sparsely populated eastern part of the county, where it is traditionally viewed as the economic base. Cash receipts from marketings of livestock and livestock products totaled $49.7 million for the county in 1991, with an additional $1.8 million from crops. This yielded an estimated net farm proprietors' income of $8.7 million, farm labor and other perquisites (room and board,etc.) income estimated at $4.0 million, and other farm labor (custom, etc.) income estimated at $293 thousand.

During FY 1994, twelve cooperators received assistance from ADC on public lands administered by Elko District-BLM. This is typical of previous years as well. The number of cooperators receiving assistance from ADC is a small percentage of the total individuals contributing to the local economy.

Under the Proposed Action, for those cooperators that participate in ADC's IWDM program, livestock losses due to predators should be minimized.

Unintentional trapping of domestic sheep in steel leghold traps and snares could occur. Injuries to these animals may result.

Recreation

IWDM activities are normally conducted away from high public use areas. The Proposed Action designates the popular recreation sites in Elko District-BLM as "no control areas/public safety zones". However, the public cannot be completely excluded from areas where IWDM measures may be used. Potentially, domestic dogs accompanying recreationists are most likely to encounter IWDM control apparatus which could kill or maim. In the last five years of records used in this analysis, no capture or killing of domestic dogs has occurred through IWDM activities conducted by ADC on Elko District-BLM. Bird hunting, especially with dogs, could be impacted in certain areas. However, the timing of IWDM activities and hunting seasons within the Elko District-BLM seldom overlap. On those occasions when they do, ADC personnel post the areas where IWDM is being conducted to prevent unintentional pet captures. A special consideration for M-44 use is included in the Proposed Action that requires ADC to coordinate with NDOW to avoid high game bird hunting use areas during hunting seasons, so the potential of killing a domestic dog is reduced.

Harvest of coyotes, bobcats, and mountain lions by local sportsmen is usually not impacted by the IWDM program, particularly in light of the recent decline in fur value. If fur prices increase, a conflict between sport harvest and ADC take could occur, but the conflict should be minimal because the majority of control activities are initiated by ADC after the fall and early winter sport harvest.

Other recreational values are not expected to be affected. The Proposed Action calls for "human safety zones/ no control areas" at developed campgrounds, streams, along major highways, and around human habitation.

Wilderness

Wilderness study areas are not within "primary control areas" under the Proposed Action and no impacts are expected to wilderness values unless an emergency situation arises.

BLM Manual 6830.06I states "In designated wilderness and wilderness study areas, only the minimum amount of control necessary will be authorized so as to ensure protection of wilderness wildlife and resource values." The manual further states in 6830.4C.3. "Animal damage control in designated wilderness areas must be approved by the State Director on a case-by-case basis." No designated wilderness areas exist on the Elko District-BLM. If an emergency arises, approval by the BLM District Manager or other authorized officer would be required before any control actions are taken within wilderness study areas identified on Maps 3A-H in the proposed IWDM plan, Attachment 1. If control activities are required under emergency procedures, then all ADC control activities within wilderness study areas are required to meet five stipulations to minimize impacts to wilderness values (see page 10 & 11 of the proposed IWDM plan, Attachment 1). Control would be directed at individual animals causing the depredation. Only the minimum control necessary to curb the depredation could be used.

Target species, particularly mountain lion and bobcat provide important supplemental wilderness value. To the wilderness recreationist, these species represent the primitive, undeveloped character of the land, and enhance their recreation experience. Removal of any of these animals could detract from the wilderness recreation experience. In the past five years, no emergency control actions in wilderness study areas have been required. It is unlikely that depredation control will be required in any of the wilderness study areas on the Elko District. In the unlikely event emergency control is required, the impact should be minimal.

Firewood Harvesting
To minimize public contact or contact by pets with control apparatus, the twelve community firewood harvesting areas and a buffer of 1/2 mile are closed to IWDM activities. Impacts to the firewood harvesting public are expected to be minimal under the Proposed Action.

Provisions for Emergency Control
Damage situations outside the planned control areas would be considered on a case-by-case basis. When ADC receives such a request, they would consult with the District Manager and give details of the problem and recommend control measures to be taken. After analyzing the situation, the District Manager would either approve or disapprove ADC's recommendation. Any approval would fall within the guidelines of the existing EA, MOU's, and Federal and State laws and regulations. Therefore, impacts are expected to be the same as those already covered.

Without an approved plan during FY 1994, only emergency control activities were authorized on Elko District. From October 1, 1993 through September 30, 1994, the District received and granted 23 requests for emergency control of predators, involving 12 cooperators grazing on 15 separate allotments (Table D-4). Livestock loss reported by ADC during this 12 month period was 163 ewes and 287 lambs. ADC responded by taking 338 coyotes and 6 mountain lions.

D1a. Mitigating Measures for the Proposed Action

*Chemical toxicants should not be allowed in WSA's.

*ADC aerial operations below 500 feet above ground level should not be allowed in any herd area presently occupied by wild horses between March 1 and June 30. Exceptions would have to be approved on a case-by-case basis by the District Manager.

*M-44's and DRC-1339, if approved, should be placed in areas where the risks to threatened, endangered, or candidate species are minimized.

*ADC should adjust aerial IWDM operations when any large raptor nest is encountered on public land in order to avoid collisions or harassment. As soon as active nests are encountered, ADC technicians should keep a ¼ mile buffer between active nest sites and aircraft being used.

*If WSA's become designated wilderness areas, then animal damage control activities should require approval by the State Director on a case-by-case basis as per BLM policy. Actions within all WSA's should meet the non-impairment criteria as stated in the IMP. Within WSA's, IWDM activities by ADC, including vehicular travel off existing roads and trails, should require prior approval by the District Manager or other BLM authorized officer.

*In areas where the take of nontarget species increases beyond levels NDOW/ADC/BLM believes to be acceptable to the maintenance of those populations, every effort should be taken to avoid the further take of the species of concern.

*All leghold traps, head snares, and foot snares should be checked every 96 hours.

D1b. Unavoidable Impacts of the Proposed Action
Individual animals of target and nontarget populations would be removed from the ecosystem as a result of ADC activities.

Some domestic livestock losses to predators would continue under the proposed IWDM program.

Table D-4
ADC EMERGENCY REQUESTS ON ELKO DISTRICT-BLM FY 1994

ALLOTMENT	DATE	PREDATOR
West Cherry Creek	09/14/94	mtn. lion
Beaver Creek	09/09/94	coyote
Stag Mountain	08/24/94	coyote
Salmon River	06/10/94	coyote
Rock Creek	06/01/94	mtn. lion
West Cherry Creek	05/31/94	mtn. lion
Rock Creek	05/15/94	mtn. lion
Devils Gate/Stag Mtn.	05/23/94	coyote
Double Mountain	05/11/94	coyote
West Cherry Creek	05/02/94	coyote
Red Rock/Browne	05/02/94	coyote
Rock Creek	03/09/94	coyote
Hubbard Vineyard	03/14/94	coyote
Salmon River	03/14/94	coyote
North Four Mile	02/10/94	coyote
Boone Springs	01/31/94	coyote
Utah/Nevada #1 North	01/21/94	coyote
Badlands	12/29/93	coyote
Ferber Flat	12/29/93	coyote
White Horse	12/06/93	coyote
Red Rock/Browne	11/15/93	coyote
Rock Creek	10/04/93	coyote
Double Mountain	10/04/93	coyote

D2. Impacts of the No Action Alternative

This alternative would eliminate the use of ADC in the control of wildlife predation on public lands. The number of predators and nontarget species taken on public lands by ADC would drop to zero. Sport hunting and fur trapping would continue. ADC operations would continue on private land. In the short-term, there would be an increase in coyote population density. Sport and fur harvest may increase in the short-term due to an increase in animal densities. In the absence of human involvement, it is doubtful that mountain lions would be appreciably more abundant in the Great Basin (Knowlton, et al, 1977). Without any animal damage control activities, livestock operators who experience predator losses may be forced to control predators on their own. Livestock operators may use the most effective control measures without concern for environmental impacts. There would be no way except through state laws and law enforcement personnel, which are not plentiful, to regulate the use of poisons for control activities by individual operators. Impacts to wildlife could be adverse for both target and nontarget species. A possibility exists for misuse of control measures, especially chemical toxicants some of which are nonselective and increase chances of secondary poisoning. Unmanaged, indiscriminate, or intensified controls toward the entire species could lead to adverse impacts to local populations and disrupt the ecological balance of the area. Losses of target and nontarget species would not be recorded or monitored.

Threats to federally listed and other special status wildlife species might occur as a result of application of methodologies that differ from standards used and advised by ADC. This could occur as a result of deliberate action by some, or as a consequence of simply not being familiar with problems or hazards associated with lethal predator control methods in general.

Wild horse populations could be disturbed and/or displaced by indiscriminate aerial gunning by private parties during foaling season. This could cause death to foals and possibly some mares.

If ADC activities were discontinued on public lands, livestock losses (especially sheep) would undoubtedly escalate for several years. The USFWS-EIS (1979) estimated that under this alternative the loss of sheep originally increased by 8% and then decreased by 10% of the base line levels at the end of the 8 year evaluation period. It is not known if nonlethal control methods were considered for the evaluation period. As stated earlier in this document, studies conducted by Crabtree indicate that coyote recruitment in unexploited populations is less than half of the recruitment in exploited populations. Since the majority of sheep predation is associated with feeding pups it seems logical to assume that the election of this alternative would reduce coyote recruitment with a subsequent reduction in loss of sheep to predation (Crabtree, personal communication, May 1992). The continued sport harvest of coyotes combined with the take by permittees and ADC on private land may nullify this response.

Sport harvest of predators would continue at its present rate and would undoubtedly fluctuate at the same rate as the value of furs (Table D-1).

Wilderness recreationists would not be disturbed by low-flying ADC aircraft hunting predators.

D2a. Mitigating Measures for the No Action Alternative

Where funding and available personnel allow, BLM would provide monitoring to ensure that appropriate federal and state policies and regulations are followed, including but not limited to IMP violations in wilderness study areas and the use of toxicants on public lands.

D2b. Unavoidable Impacts of the No Action Alternative

Livestock losses on public land could be expected to occur at rates described in the USFWS-EIS (1979) outlined in section D2.

The number of predators killed by livestock operators could be greater than under the Proposed Action. The total number of predators killed would in all likelihood be less than under the Proposed Action. No data are available to quantify this impact.

Implementation of this alternative could place an economic burden on affected livestock operators, in particular those associated with the domestic sheep industry.

D3. Impacts of the Restricted Management Alternative

Based on local ADC records, it is apparent that coyotes cause predation losses for producers in the analysis area and that ADC assistance on their behalf is justified periodically. Benefits to cattle and sheep producers would vary greatly depending upon local circumstances and the particular year considered. Annual and local variation in losses would be expected to occur.

In a 1986 survey of approximately 400 producers with guarding dogs, Green and Woodruff (1990) indicated 82% found the use of dogs represented an economic asset, 9% said dogs were a break-even investment, and 9% considered dogs an economic liability. Several breeds of dogs from Europe and Asia have been available for use to livestock producers. The most commonly used breeds are Great Pyrenees, Komondor, Akbash, Anatolians, and Maremmas. The majority of the research and practical experience with guarding dogs has focused on the dogs' ability to reduce predation by coyotes and domestic dogs. Green and Woodruff reported that 95% of the guarding dogs were aggressive to predators (primarily coyotes) and that coyotes usually avoid a direct encounter with a guarding dog.

One livestock operator in the Winnemucca District indicated he has raised and used guarding dogs in his sheep operation for approximately ten years, and currently has approximately 100 animals (Tom Filbin, personal communication, May 1992). He stated he has tried many different types of nonlethal methods to control coyote depredation (propane guns, sirens, lights, radios, etc.) but he has had the most success with guarding dogs, even though they are expensive to raise and maintain. He indicated that guarding dogs are a big help, but they are not fool proof, and he still needs ADC's assistance. He stated that he knows of at least two other operators in the area that are utilizing guarding dogs in their operation. Some sheep producers in the Elko District use guard dogs, too.

Mechanical devices are also being tried by other individuals in Nevada. In the Ely area, one operator is using an electronic guard in which sirens and strobe lights are activated intermittently at night. The device is self-contained, portable, and can be placed in a tree or in a pickup truck. It is being used in an open range situation to protect domestic sheep. No losses of sheep to coyotes have been reported in the two months it has been operating. It will also be tried when the sheep are moved to fenced fields near the communities of Jean and Lund in southern Nevada. Nothing has been reported about its effects on the herder.

A propane "exploder" has been used to protect dry ewes wintering on alfalfa stubble near Empire, Nevada, in the Winnemucca District. The device has been used for several years. No losses of ewes to coyotes have been reported. Again, nothing has been reported about its effects on the herder.

In the Carson City District, several bands of sheep are being monitored where the ewes give birth to lambs in sheds and in fenced farm fields. There has been little discernible difference in lamb losses between those areas. The ewes that lamb in sheds are grazed on public lands in bands and the fenced-field ewes are from farm flocks. Lambing sheds would reduce losses from weather and perhaps from predators, but apparently the lack of suitable pre- and post-lambing pasture and other labor problems preclude shed lambing in range sheep operations (Tigner and Larson, 1977).

The use of mechanical devices when depredations are not imminent could be counter-productive by allowing coyotes to become accustomed to the stimuli before they are really needed, thereby reducing their effectiveness (Linhart 1984; Linhart, et al 1984; Knowlton 1989).

The proper management of livestock plays an important role in minimizing the risk of depredation by predators. There is not one method of predator control that will be effective for every livestock operator. Those operators that are most successful use an integrated approach, combining good husbandry practices with guarding dogs, good herders, mechanical scare devices, and shooting when necessary (Green and Woodruff, 1990).

With limited preventive control under this alternative, the annual number of coyotes taken on public land in the Elko District by ADC is expected to be less than the five year average (FY 1990 through FY 1994) of 1,177 coyotes per year. The number of livestock lost under the Restricted Management Alternative is expected to be the same or less as the Proposed Action. The requirements to practice more intensive animal husbandry and behavior modification, with greater emphasis on nonlethal control, is expected to offset losses that occur with reduced preventive lethal control.

The anticipated impacts to wildlife, threatened, endangered, or candidate species, raptors, wild horses, recreation, and wilderness values would be beneficial by the implementation of this alternative. The benefits received would be in the form of reduced opportunities of target and nontarget species being trapped and held in traps for extended periods, and less opportunities for species and recreationists being disturbed by low-flying aircraft or encountering lethal control devices. Private control, if cooperators choose to pursue additional lethal control on their own as they are legally allowed, may nullify these benefits, however.

Take of nontarget species is expected to be reduced even further under this alternative as compared to the Proposed Action because more reliance on nonlethal controls should reduce the need to use traps or snares.

February through July aerial gunning for sheep producers could cause collisions between aircraft and raptors or nesting disturbances for species including prairie falcons, red-tailed hawks, Cooper's hawks, and golden eagles. Avoidance of raptor nest sites by at least a 1/4 mile buffer after they have been observed during aerial gunning operations would greatly reduce or eliminate the chances of collisions endangering personnel and raptors.

Under the terms and conditions specified by the U.S. Fish and Wildlife Service in the biological opinion, and those identified under this alternative, winter populations of northern bald eagles would not be jeopardized as a result of IWDM control methodologies . Peregrine falcon migrants would not be expected to suffer any losses or injuries since they take prey on the wing and would not be lured to traps.

Over the long-term, coyote populations would continue to vary regionally and locally depending upon fur market values and prey base fluctuations which influence their numbers. Temporary reductions in local coyote populations would be expected to occur as a result of IWDM lethal controls.

Lethal predator control by ADC and the private sector could potentially stimulate coyote reproductive responses with adverse effects to producers as described in the impacts of the Proposed Action. There are no local data available to quantify how widespread or significant this effect is or would be in the analysis area. Local research efforts to quantify this effect are not likely to ever be pursued at current and foreseeable ADC and BLM program funding levels. Predator research biologists from the private and federal sector disagree about the significance of this response to producers and predator control in general.

Coyote population structures and territorial patterns would be disrupted annually in and around lethal control areas due to losses of various age classes of coyotes normally found in wild unexploited populations.

Based on field data from FY 1990 through FY 1994, an average of 4.4% of the total resident coyote population of the analysis area has been removed as a result of past IWDM actions to protect livestock (Table D-2). This indicates that no significant or irreversible long-term impacts to coyotes would result from this alternative, because fewer coyotes are expected to be removed from the resident population. Reasons for this conclusion are described in Section D1.

Although the overall coyote population in the analysis area would not be significantly impacted by ADC's operations, individual animals would be destroyed or injured. Lethal control actions inflict pain, injury, suffering and intense stress to target and nontarget animals. This alternative would reduce the pain and suffering over that of the Proposed Action by requiring traps and snares be checked at least every 96 hours. Although not human induced, pain and suffering also takes place in the wild as a consequence of natural predator and prey interactions. ADC asserts that actions taken by their organization under this alternative would lessen the amount of injury, death, pain, and suffering for wild and domestic animals that suffer the consequences of natural predation.

The timing of aerial control operations normally does not conflict with local furtakers who view coyotes as an economic resource. If aerial control is performed during the prime pelt season, potential adverse impacts could occur.

Existing regulations for flight operations in connection with aerial gunning would be expected to avoid significant adverse impacts to the human environment. The removal of all potential for accidents involving the public or federal employees carrying out the program would occur only after eliminating this management option.

Even limited preventive control (two weeks prior to turnout) provided under this alternative, and as authorized by BLM and ADC policies, may invoke strong disapproval by some animal welfare organizations that view taking any more than offending animals as improper federal policy.

Cooperators who are required to pursue animal husbandry and behavior modification methods on their own private land or public lands, in order to qualify for lethal predator control on public lands, could find themselves expending time and money for unfamiliar management practices. Some might have to adjust timing, location, and other practices of lambing/calving from which they are accustomed. Increased losses of livestock might occur until they become more familiar with the best local mixes of animal husbandry and behavior modification techniques. The extent of time and money required would vary depending upon the type and number of applications tried. Some useful equipment can be acquired as temporary loans from ADC and others. If purchased, this equipment could cost cooperators hundreds or even a few thousand dollars.

Based on documented successes in using nonlethal and humane control methods, several livestock producers could lessen the number of livestock losses to coyotes, reduce the number of predation situations, and thereby foster long-term economic benefits.

Some producers may conclude that the amount of effort required to use recognized IWDM methodologies and qualify for lethal control by ADC on public land (as may be imposed through BLM grazing license stipulations) would be better spent paying for their own private control operations on the public lands. The number of individuals who might respond this way is unknown. This practice is legal under Nevada state law and, based on BLM Washington Office advice, there are no federal regulations preventing them from doing so. Neither BLM nor ADC encourage this practice. Both agencies speculate that there would probably not be a very widespread effort on the part of producers to pursue this option, although it is already known to take place in some instances. It is expected that most private individuals would be less likely to rely on their own methods of problem resolution given the availability of some professional federal assistance. However, ADC's efforts would not be expected to eliminate this probability, nor is it implied that ADC is the only influence in the analysis area keeping such adverse impacts from taking place.

D3a. Mitigating Measures for the Restricted Management Alternative

None

D3b. Unavoidable Impacts of the Restricted Management Alternative

Some livestock operators may experience an economic hardship to finance one or more of the nonlethal methods where none are in place.

D4. Impacts of the Expanded Predator Management Alternative

The intense application of control measures in this option could be expected to result in the most significant reductions in local coyote populations for livestock producers. Coyote numbers could be reduced substantially more than the Proposed Action or the Restricted Management Alternative. It is estimated that a 30% to 50% increase in coyote take by ADC might ensue. This is a highly speculative assessment, as no data are available to make an accurate statement about coyote reductions which might result.

The effectiveness of the ADC work force in eliminating coyotes would be expanded considerably given that toxicants and other methods not considered in the Proposed Action could be used by both government employees and the private sector. These effects would likely be localized since some cooperators would view this approach as overreactive and unnecessary.

Increased coyote reproductive responses might occur in some local areas. Of all the alternatives analyzed, this alternative would be expected to pose the highest risk of increased need for more control by producers. The elevated use of toxicants would be expected to significantly increase the likelihood of nontarget animal losses in spite of the controls required by federal/state regulations.

Reduced coyote numbers and population reproductive responses would be temporary and would terminate following the cessation of intensive control. The coyote's biological capacity to recover from population losses would prevent their extermination from the Elko District accepting the assumption that only a 30% to 50% increase in coyote take is accurate.

Although ADC applications would be expected to be much safer than what was practiced in earlier decades when control actions were even more intense, this approach would likely evoke strong public disapproval, and perhaps be short-lived.

Furtakers could experience localized short-term reductions in coyote populations available for harvest from public lands.

D4a. Mitigating Measures for the Expanded Predator Management Alternative

The mitigating measures for the Expanded Predator Management Alternative would be the same as those described under the Proposed Action.

D4b. Unavoidable Impacts of the Expanded Predator Management Alternative

The unavoidable impacts of the Expanded Predator Management Alternative would be the same as those described under the Proposed Action.

D5. Impacts of the Corrective Control Alternative

The impacts of this alternative would be similar to the Proposed Action and Restricted Management Alternative except preventive coyote control would not be allowed. Traps and snares would have to be checked daily until losses stop and control is discontinued. Emergency control would require prior approval by BLM. The impacts of this alternative, other than those described under the Proposed Action, are as follows:

Corrective and preventive control are generally used to describe lethal control activities. Historically on Elko District-BLM, aerial shooting for preventive control has occurred during the period of January through March.

It is limited to this time frame due to the concentration of coyote populations at this time of year, enhanced visibility because of snow cover and reduced foliage, lower helicopter costs, and increased helicopter availability.

The position can be taken that animals should not be targeted simply because they inhabit a domestic sheep grazing allotment. Preventive control may not be appropriate. Some studies suggest preventive control may perpetuate a cycle of increased litter size and immigration of new animals from outside a control area that circumvents the intent of preventive control (Connely and Longhurst 1975; Crabtree 1992; Crabtree, et al. 1988; Crabtree and Ables 1988; Frank 1979; Knowlton 1972; Knowlton 1989). Several Nevada studies (Klebenow and McAdoo 1976, Kauffeld 1977, McAdoo and Klebenow 1978) have shown that coyote predation intensity was greatest during spring while coyotes are denning and during late summer when pups are hunting with adults. Intensity is least during the winter when coyotes are breeding. Increases in predation in late summer have been noted by other researchers as well (Rosko 1948; Bowns et al. 1973). One explanation suggested for this late summer predation increase is that growing pups are more active in late summer with resultant increased food requirement (McAdoo and Klebenow 1978). A northern Nevada study of coyote food habits found that, in addition to increased food demands by pups, a primary food source for coyotes (Belding ground squirrels) estivated in late summer, perhaps leading to increased predation (Howanyk 1975).

It is expected that take of coyotes would be reduced if winter preventive control were not conducted. The losses of domestic sheep may or may not increase depending upon the intensity and effectiveness of corrective control actions that are applied. During his studies in northeastern Nevada, McAdoo noted that the most effective control was obtained by denning during the spring (McAdoo, personal communication, December 1994). His observation is supported by other studies as well (Anderson 1969; Knowlton 1989; Till and Knowlton 1983). During FY 1994, all lethal control work on the Elko District was corrective, no preventive control was authorized. Livestock loss reported by ADC during this 12 month period was 163 ewes and 287 lambs. ADC responded by taking 338 coyotes and 6 mountain lions. Preventive control was allowed during FY 1990, 1991, 1992, and 1993. Data from Tables C-1 and C-5 indicate that with preventive control, coyote take by ADC was substantially higher per year (greater than 1,131 coyotes), and depending on the year, losses by cooperators were greater during FY 1993 and 1991 and less during FY 1992 and 1990, than losses that occurred with only corrective control.

Historically, M-44 use on the District has been very limited, with no use occurring during the period FY 1990 through FY 1994. Sensitivity of chemical use on public lands is high. Human population levels within Elko County are increasing rapidly, with more and more use occurring on public lands. Concern exists with any possible contact by the public or their pets with M-44s. Because of the very limited historical use of this control method, elimination of this control method should have little effect on control operations. Any potential risk to the public, including hunters or other recreationists with dogs, would be eliminated.

ADC is exempt from State regulations that require visitation of traps at least every 96 hours. Under the Corrective Control Alternative, when effort is being directed at specific animals in a limited area, the humaneness of not visiting traps more often comes into question. Under this alternative, on Elko District-BLM administered lands, ADC personnel would be required to visit traps at least every 24 hours to reduce the length of time target and non-target animals would be trapped and further implement control actions more humanely beyond those refinements (pan tension devices, offset jaws, etc) that are already followed by ADC personnel. When asked what impacts a 24 hour trap check requirement would have on the IWDM program, ADC indicated it would cost ADC in Nevada an additional 4.1 million dollars annually to comply statewide.

ADC stated the increased costs would be associated with the additional personnel and travel expenses necessary to check all of the equipment every 24 hours.

D5a. Mitigating Measures for the Corrective Control Alternative

None

D5b. Unavoidable Impacts of the Corrective Control Alternative

Some livestock operators may experience an economic hardship to finance one or more of the nonlethal methods where none are in place. ADC personnel will have to intensify their efforts in checking traps. This may further limit the effectiveness of ADC because of a decreasing federal workforce. More reliance on aerial gunning, private sector control, or other methods except trapping, may be necessary. Situations may develop where ADC may not physically be able to visit traps every day because of weather conditions, sickness, or other factors; thereby not conforming to the 24 hour trap check.

D6. Impacts of the No Lethal Control Alternative

In the short-term, exclusive use of nonlethal control methods on public land would be less effective than the Proposed Action, the Restricted Management Alternative, the Expanded Predator Management Alternative, or the Corrective Control Alternative for some cattle producers and all sheep producers. ADC would continue to utilize lethal control on private land. In the long-term, as stated earlier in this document, studies conducted by Crabtree indicate that coyote recruitment in unexploited populations is less than half of the recruitment in exploited populations. Since the majority of sheep predation is associated with feeding pups it seems logical to assume that the election of this alternative would reduce coyote recruitment with a subsequent reduction in loss of sheep to predation (Crabtree, personal communication, May 1992). This scenario would depend on coyote take on private lands and non-ADC take on public land by permittees, sport harvest, and others remaining constant or being reduced. The continued sport harvest of coyotes combined with the take by permittees, and ADC on private land along with any increased take by other people not associated with ADC on public land may nullify this response.

Cattle and sheep operators could fund their own control programs on federal land, thus avoiding the no lethal control requirement placed on ADC, since current laws and regulations would not prevent them from doing so. Those individuals fortunate enough to be stable financially in their businesses would be able to absorb the costs for pursuing legal forms of control with privately funded employees hired to remove coyotes. Some would not.

It is expected that sheep producers would be more adversely impacted than cattle producers since sheep are more vulnerable to coyote predation. According to the 1979 USFWS-EIS, average losses for sheep operators with lethal control was .3% for ewes and 4.3% for lambs in contrast to a 3.2% for loss of ewes and 14.9% for lambs without some lethal controls. It is not known if any form of nonlethal control was considered in formulating these loss estimates. This magnitude of increased sheep loss without some form of lethal control would be expected within the analysis area in the short-term, under this alternative.

It is not known whether all levels of loss would ultimately result in forcing sheep producers out of business in the analysis area. This determination would require obtaining personal financial information about producers which is not included in the analysis.

The likelihood of obtaining grazing privileges elsewhere on other private or federal lands, assuming they could not continue to take the expected losses in the analysis area, is not known.

One or more of the current sheep operators might be able to sustain the expected losses and be able to continue to graze on public land within the analysis area. Those unable to take the expected losses might be driven from their business in the analysis area because full reliance upon nonlethal control might not be effective enough to sustain an economically viable operation in their circumstances.

Effective use of guarding dogs would help sheep producers to avoid many losses, but local experience and most literature shows that it could not be relied upon as the sole means of protecting sheep.

A new nonlethal method, not yet employed on the Elko District, is the use of llamas as guard animals. Llamas appear to be more effective and economic than guard dogs (Iowa State University 1993). Llamas may be used in the future on Elko District, as sheep operators become more familiar with the benefits of these animals. A new publication entitled "Guard Llamas" is available from ADC to interested parties.

Most cattle operators could probably protect a majority of their calf crops by staying on private land during periods of high vulnerability (calving) and practicing the various legal forms of integrated control as advised by ADC. Some cattle operators might be forced into making major adjustments in the timing and location of their calving in order to avoid losses of calves or else pay for their own lethal control programs as deemed necessary.

Emigration of coyotes from surrounding public or private lands might continue to pose conflict settings for some, even where private land controls of a lethal nature were exercised.

Behavior modification techniques would temporarily limit some predation for producers during the calving/lambing period. These practices would be expected to solve predation situations only temporarily and be of usefulness when used with a combination of other predator management methods.

This option could be challenged as contrary to the intent of the Taylor Grazing Act which directs BLM to stabilize the livestock industry. Arguably, this alternative works to introduce more potential uncertainty and instability for producers dependent upon the public lands for their livelihood. Conversely, it would be supported by some as the most cost effective means for the federal government to practice predator management on the public lands.

The cumulative amount of coyote removal on public and private lands in the analysis would be very similar to the Restricted Management Alternative. Increased take on private lands is expected to compensate for lowered numbers of coyotes taken off public land.

There would likely be an increase in the use of measures which differ from ADC standards of safety and effectiveness. It is probable that increased, unintentional nontarget losses of wildlife on private and public lands would occur under this option. The amount of impact that could be expected is not known.

Big game populations and ground nesting populations of game and nongame bird species could be at levels more closely akin to natural states.

Impacts to local coyote populations and nontarget species on public lands as a result of federal action would be eliminated. Privately funded efforts would be expected to continue and probably increase. This would be dependent upon the amount of lethal control exercised by cooperators and others on federal land. Coyote population characteristics would more closely reflect their biotic capacity and natural fluctuations on public lands. Chances for increased reproductive responses by coyotes would be reduced somewhat but not eliminated because of ADC take on private land, and hunter, trapper, and producer efforts to continue lethal controls.

Adverse impacts described from the use of various lethal control methods conducted by ADC under the Proposed Action, the Restricted Management Alternative, and the Expanded Predator Management Alternative would be avoided on the public lands. They would not be eliminated because of the potential for private individuals to exercise their own state and federally permitted private controls.

D6a. Mitigating Measures for the No Lethal Control Alternative
Where funding and available personnel allow, BLM would provide monitoring to ensure that appropriate Federal and State policies and regulations are followed, including but not limited to IMP violations in wilderness study areas and the use of toxicants on public lands.

D6b. Unavoidable Impacts of the No Lethal Control Alternative
The number of predators killed by livestock operators could be greater than under the Proposed Action. The total number of predators killed would in all likelihood be less than under the Proposed Action. No data are available to quantify this impact.

Implementation of this alternative could induce short-term costs on affected livestock operators, in particular those associated with the domestic sheep industry. Additional short-term costs may force some operators to abandon the sheep industry.

E. MONITORING

Under the Proposed Action, Restricted Management Alternative, Expanded Predator Management, Corrective Control Alternative, or combination of the Proposed Action and these alternatives, ADC would be required to provide data on their activities. This information is necessary for documenting the impacts of predator control on the public lands, reevaluating the use of specific control techniques, and for deciding on appropriate activities for the coming year. All data identified below in the prescribed format would be submitted to the Elko District-BLM by early December each year. This data would be available for public inspection at the Elko District-BLM.

Required data would include:

1. The total number of livestock lost per class, age, and location (to nearest township-range-section or general topographic location such as canyon, field, other landmark, and BLM grazing allotment) as a result of predation. Whether these were verified by ADC or reported losses to predation shall be identified.

2. The total number and species of predators killed by date, method, and location (to nearest township-range-section or general topographic location such as canyon, field, other landmark, and BLM grazing allotment).

3. The total number of predators killed, by species, as a consequence of preventive or corrective action.

4. The total number of nontarget animals taken by date, method, species and location (to nearest township-range-section or general topographic location such as canyon, field, other landmark, and BLM grazing allotment). It shall be identified whether or not the animal was released alive and capable of self maintenance, died, or had to be euthanized as a result of injury.

5. The steps taken by each cooperator to pursue animal husbandry and behavior modification actions which limit the need for lethal controls on the public lands. ADC would provide the information to BLM before formulating the annual control agreement or responding to individual requests where this information has not already been supplied by cooperators.

BLM considers accurate record keeping by ADC to be the most critical component of monitoring in support of IWDM operations on public land. However, BLM would take steps to periodically validate that management practices are being followed by ADC and cooperators such as:

* Validating that guarding dogs are being used as reported.

* Checking traps to make sure properly adjusted pan tension devices are being used.

* Validating that behavior modification methodologies are actually being used as reported.

F. RESIDUAL IMPACTS

In spite of the controls or mitigation for the Proposed Action or alternatives, the following residual adverse impacts could be expected to occur:

1. Raptors could be caught in leghold traps resulting in injury, removal from the wild, or death.

2. Accidents jeopardizing the health and well being of ADC employees and members of the public could result from aerial gunning or other control methods.

3. Domestic animals could be caught in traps intended for predators which would result in injuries or deaths.

4. Any alternative which permits the destruction of wild animals for agricultural and economic reasons would be perceived as improper by some members of the preservation and animal rights community. The harassment, pain, suffering, and terror experienced by individual animals destroyed by these actions cannot be eliminated without completely eliminating IWDM actions. Under current legislation, this is not a legal option for BLM.

G. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Under the Proposed Action and each of the alternatives with some form of lethal control, individual predator species and nontarget animals would be removed permanently (irreversibly) from public land. Localized reductions in predator and nontarget animal populations within the Elko District could be reversed following the cessation of lethal control actions assuming none of the populations of impacted species are in severe decline or close to extinction.

H. CUMULATIVE IMPACTS

The total estimated coyote population for the public lands administered by Elko District-BLM, before any natural or human caused mortality occurs, is roughly 26,953 animals as shown in Table C-2. Using information shown on Table C-1, the average coyote take from ADC operations on public land in Elko District is 1,177 animals per year or 4.4% of the annual total population. ADC take combined with sport harvest equates to roughly 6.3 % of the annual total population of coyotes or 14.8% of the adult base population estimated to inhabit Elko District (Table D-2). This level is far below what Connolly and Longhurst (1975) stated would be necessary to eliminate coyotes from an area, which is an annual coyote take of 75% of the population for 50 years. Even assuming there is significant unreported take by other means such as livestock permittee take, vehicle mortalities, etc. which is equal to the amount NDOW reports from furtakers and ADC control (an additional 6.3% take), it is apparent that the combined effects of ADC control, coyote fur harvest, and other human induced mortality (12.6% total cumulative take) are not jeopardizing coyote populations on the Elko District-BLM as a whole.

Approximately one half of all the adjoining habitat in the Elko District receives little or no significant human induced pressure on coyote populations. These largely uncontrolled areas are reservoirs of population replacement for a species of predator that is incredibly adaptive and able to emigrate into territorial voids. Given that the area of analysis is surrounded by literally thousands of square miles of similar habitat under similar influences by ADC and others, coyote harvest in general appears to pose little chance for insidious forms of cumulative impacts that might be expected to eliminate coyotes in the state or region.

BLM considered whether or not the reproductive responses by coyotes and the potential problems as described by Bob Crabtree might happen as a result of the cumulative effect contributed by public land lethal controls. The Bureau cannot summarily dismiss this potential outcome given the research documented on unexploited coyote populations, successes in limiting coyote damage elsewhere when substantial nonlethal means are pursued, and the fact that there are no local studies to demonstrate this mechanism is not at work in the analysis area.

If the Crabtree scenario is correct, public land actions are probably contributing to this effect. How much private and public land actions interrelate and contribute is not fully known for the analysis area. Costly research studies would have to be conducted in order to bring a resolution to this question in the analysis area. Neither ADC nor BLM would be able to fund such research in the foreseeable future given the tendency to look for reductions in federal spending.

Assuming that coyote take from trappers and hunters originates on private and public land in approximately the same ratios that ADC does, over half of the coyote take in the Elko District comes from a small percentage of the total land base. It is probable that private land control efforts may have such an overriding influence in possibly causing the Crabtree scenario to occur that the potential impacts from lethal controls on public land are secondary in their importance. BLM does not imply that this is reason to abandon nonlethal approaches. The data does suggest, however, the important role that private landowners and ADC actions on private land may have in influencing coyote depredation management.

I. PERSONS, GROUPS, AND AGENCIES CONSULTED

On March 29 1994, Environmental Assessment BLM/EK/PL-94/015 with a decision record addressing a proposed Integrated Wildlife Damage Management Program, 1994-1998, to be conducted by the U.S. Department of Agriculture's, Animal and Plant Health Inspection Service's, Animal Damage Control (ADC) on public lands administered by the Elko District, Bureau of Land Management was sent to seventy-six individuals, agencies, grazing permittees, and/or organizations.

On April 25, 1994 the Nevada State Director rescinded the original decision record and opened a formal public review period through June 3, 1994. A letter was sent to the original seventy-six individuals, agencies, grazing permittees, and/or organizations notifying them of the rescission and new public review period. On April 29, 1994, a notification was made to 199 other individuals, agencies, grazing permittees, and/or organizations that the environmental assessment (EA) was available for public review, and a copy could be obtained upon request. On May 2, 1994 a news release was issued to twenty-seven newspapers and/or radio stations in the local area and region to notify the public of the availability of the EA and the comment period. From the written notifications and news releases, twenty-two requests were received for which a copy of the EA was sent.

People or Organizations That Provided Written Comments

Larry Gilbertson	Nevada Division of Wildlife
Maud Naroll	Nevada Dept. of Administration, State Clearinghouse
Gary Simmons	USDA-Animal Damage Control
Susan Hagood	The Humane Society of the United States
Joel Blakeslee	Nevada Trappers Association
Stephanie D. Licht	Nevada Woolgrowers Association
Nancy Whitaker	Animal Protection Institute
Betsy Macfarlan	Nevada Cattlemen's Association
Deloyd Satterthwaite	N1 Grazing Board & Ellison Ranching
Doug Busselman	Nevada Farm Bureau
Kendra R Cox	
Hosanna U.V. Broderick	
Andreas Lichblau	
Mike Perault	
Kent McAdoo	

J. INTENSITY OF PUBLIC INTEREST

The coyote, mountain lion, and bobcat appeal to a broad segment of society. Sport hunting, esthetics, and a variety of "ecologic" reasons, have resulted in a cultural endearment of these predators to individuals more geographically and economically remote than those segments actually incurring the effects of depredations. Opponents to animal damage control believe that the predator losses claimed by sheepmen are exaggerated, control practices pose problems of environmental contamination, predators are public property and have positive social value, and predator management should stem from a basis broader than control alone (Tigner and Larson, 1977).

"The present management dilemmas are a result of conflicting societal values placed on these predators. Although some members of society desire that predator populations be increased for either exploitive or nonconsumptive purposes, others seek population reductions to lessen risks to agricultural enterprises, especially livestock production." (Knowlton, et al, 1977).

Domestic livestock are injured, harassed, or killed by predatory mammals and birds. Some private landowners, and permittees authorized to graze livestock on public lands, view predators as a threat to their livelihood/industry and depend on ADC to provide relief from depredating animals. The sheep industry has stated repeatedly that predator losses are severe and that it cannot survive without effective predator control.

K. PARTICIPATING STAFF

BLM Elko District Staff
Rodney Harris, former District Manager- primary reviewer
Nancy Phelps- Associate District Manager- primary reviewer
David Vandenberg, Planning & Environmental Coordinator- NEPA review
Roy Price, Biologist- primary preparer
Steve Dondero, Recreation Specialist- recreation & wilderness input
Robert Neary, acting District Manager- decision maker

BLM Elko Resource Area Staff
Terry Dailey, Elko Resource Area Manager,- primary reviewer
Gary Back, Wildlife Biologist, wildlife, raptor, and T/E input
Carol Evans, Fisheries Biologist- riparian and T/E input
Ken Wilkinson, Wildlife Biologist- wildlife & T/E input
Jenna Whitlock, Supervisory Range Conservationist- range & livestock input
Chuck Petersen, Range Conservationist- range & livestock input
Denise Adkins, Range Conservationist- range & livestock input
Donna Nyrehn, Range Conservationist- range & livestock input

BLM Wells Resource Area Staff
Bill Baker, Wells Resource Area Manager- primary reviewer
Karl Scheetz, Supervisory Range Conservationist- range & livestock input
Skip Ritter, Natural Resource Specialist- forestry input
Kathy McKinstry, Wild Horse Specialist- wild horse input
Leticia Gallegos, Range Conservationist- range & livestock input
Bruce Thompson, Range Conservationist- range & livestock input
Jeff Baker, Range Conservationist- range & livestock input
Eric Haakenson, Range Conservationist- range & livestock input
Laura Gutzwiller, Fisheries Biologist- riparian & T/E input
Joe Viray, Fisheries Biologist- riparian & T/E input
Kent Undlin, Wildlife Biologist, wildlife, raptor, and T/E input
Russ Findlay, Range & Wildlife Specialist, wildlife, raptor, and T/E input

BLM Nevada State Office, Winnemucca District, and Ely District Staff
David Pulliam, NSO Biologist-primary reviewer
Rodger Bryan, Winnemucca District Biologist- consultant
Mark Barber, Ely District Biologist- consultant
Paul Myers, NSO Economist- socio-economic input
Ann Morgan, State Director- concurring decision maker

LITERATURE CITED

Anderson, T.E. 1969. Identifying, evaluating and controlling wildlife damage. Pages 497-521 in R.H. Giles, Jr., ed. Wildlife management techniques. 3rd ed. The Wildl. Soc., Washington, D.C.

Ashman, D.L., G.C. Christensen, M.L. Hess, G.K. Tsukamoto, and M.S. Wickersham. 1983. The Mountain Lion in Nevada. Nevada Department of Wildlife publication. 75 pp.

Bowns, J. E., J. W. Davenport, J. P. Workman, D. B. Nielson, and D. D. Dwyer. 1973. Determination of cause and magnitude of sheep losses in southwestern Utah. Utah Sci. 34(2):35-37, 52

Connolly, G.E. 1978. Predator control and coyote populations: A review of simulation models. pp. 327-345 In: M. Bekoff, Ed. Coyotes. Academic Press, Inc., New York, NY.

Connolly, G.E., and W.M. Longhurst. 1975. The effects of control on coyote populations. University of California, Division of Agricultural Sciences Bull. 1872. 37 pp.

Connolly, G.E., R.M. Timm, W.E. Howard, and W.M. Longhurst. 1976. Sheep killing behavior of captive coyotes. J. of Wildlife Management. 40(3):400-407.

Crabtree, R.L. April 1992. Effects of 1988 fires on ecology of coyotes in Yellowstone National Park: Baseline preceding possible wolf recovery. Interim Report. 18 pp.

Crabtree, R.L., J.W. Blatt, and K.A. Fulmer. 1988. Social and spatial dynamics of an unexploited coyote population in the shrubsteppe of Washington. Unpublished report (part of PhD Dissertation). 37 pp.

Crabtree, R.L., and E.D. Ables. 1988. Sociodemographic characteristics of an unexploited coyote population in the shrubsteppe of Washington. Unpublished report (part of PhD Dissertation). 37 pp.

Davenport, J.W., J.E. Bowns, and J.P. Workman. 1973. Assessment of sheep losses to coyotes--a problem to Utah sheepmen--a concern to Utah researchers. Agr. Exp. Sta., Utah State Univ., Logan Res. Rep. 7. 17p.

Denver Wildlife Research Center. 1988. Modeling the Utah Coyote Population-Notes

Frank, L. 1979. Book reviews. J. Mammal. 60:658-659.

General Accounting Office (GAO). 1990. Effects of animal damage control program on predators. GAO/RCED-90-149. 31 pp.

Green, J.S. and R.A. Woodruff. 1990. Livestock Guarding Dogs: Protecting Sheep from Predators. USDA APHIS Animal Damage Control, Agric. Info. Bull. No. 588. 31 pp.

Gross, J.S., L.C. Stoddart, and F.H. Wagner. 1974. Demographic analysis of a northern Utah jackrabbit population. Wildl. Monogr. No. 40. 68 pp.

Howanyk, Judith. 1975. A Nevada small mammal population and its use by coyotes in summer. University of Nevada, Reno. 57 pp.

Iowa State University. 1993. Guard llamas, Extension Distribution Center, 119 Printing and Publications Bldg. 12 pp.

Kauffeld, Jon D. 1977. Availability of natural prey and its relationship to coyote predation on domestic sheep, master of science thesis, University of Nevada, Reno

Klebenow, D. A., and K. McAdoo. 1976. Predation on domestic sheep in northeastern Nevada. J. Range Manage. 29:96-100.

Knowlton, F.F. 1972. Preliminary interpretations of coyote population mechanics with some management implications. J. Wildl. Manage. 36(2):369-382.

Knowlton, F.F. 1989. Predator biology and livestock management. Proc. Western Section, American Society of Animal Science 40:504-509.

Knowlton, F.F., F.H. Wagner, R.M. Timm, J. Miner, and D. Juve. 1977. Predator and livestock relationships. Presented at the Workshop on Livestock and Wildlife - Fisheries Relationships in the Great Basin, Sparks, Nevada, May 3-5, 1977. pp. 68-75.

Larsen, K.H., and J.H. Dietrich. January 1970. Reduction of a raven population on lambing grounds with DRC-1339. J. Wildl. Manage. 34(1):200-204.

Linhart, S.B. 1984. Strobe light and siren devices for protecting fenced-pasture and range sheep from coyote predation. Proc. Vert. Pest Conf. 11:154-156.

Linhart, S.B., R.T. Sterner, G.T. Dasch, and J.W. Theade. 1984. Efficacy of light and sound stimuli for reducing coyote predation upon pastured sheep. Protection Ecol. 6(1):75-84.

McAdoo K. J. and D. A. Klebenow. 1978. Predation on range sheep with no predator control. J. Range Manage. V. 31, No. 2. p 111-114.

Nass, R.D. 1975. Loss data recorded for Idaho sheep ranches. U.S. Dept. Interior, Wildl. Research Center, Denver. Unpub. narr. report, June. p. 13-14.

Nesse, G.E. 1974. Statewide coyote predation studies. Div. of Wildl. and Fish. Biology, Univ. of California, Davis. 79 pp.

Nevada Agricultural Statistics 1994 through 1990. published and compiled by the Nevada Agriculture Statistics Service, Reno, NV.

Nevada Division of Wildlife, 1994 through 1990. Nevada Upland Game, Furbearers, Mountain Lion and Migratory Game Birds Status and Hunting Season Recommendations.

Nielson, D., and D. Curle. 1970. Predator costs to Utah's range sheep industry. The Nat. Wool Grower. 60(12):14-16, 22.

Olendorff, R. R. 1993. Status, biology and management of ferruginous hawks: a review. Raptor Res. and Tech. Asst. Cen., Spec. Rep. U.S. Dep. Interior, Bur. Land Manage., Boise, Id. 84 pp.

Rosko, L. 1948. Losses of sheep from predatory animals on summer ranges in Iron County, Utah. Utah Coop. Wildl. Res. Unit Rep. 21 pp.

Stoddart, L.C. 1977. Population dynamics, movement and home range of black-tailed jackrabbits (Lepus californicus) in Curlew Valley, northern Utah. Annual Progress Report to U.S. Energy Resource and Development Administration. Contract E(11-1)-1329. 42 pp.

Tigner, J.R., and G.E. Larson. 1977. Sheep losses on selected ranches in southern Wyoming. J. Range Management. 30(4):244-252.

Till, J.A., and F.F. Knowlton. 1983. Efficacy of denning in alleviating coyote depredations upon domestic sheep. J. Wildl. Manage. 47(4):1018-1025.

University of California 1975. The Effects of Control on Coyote Populations

U.S. Department of Agriculture 1994, Animal damage control program, final environmental impact statement, Animal Plant Health & Inspection Service

U.S. Fish and Wildlife Service. 1978. Predator damage in the west: A study of coyote management alternatives. U.S. Dept. of Inter., Fish and Wildlife Service. Washington, D.C. 168pp.

U.S. Fish and Wildlife Service. 1979. Final Environmental Impact Statement on the U.S. Fish and Wildlife Service's Mammalian Predator Damage Management Program. U.S. Dept. Inter., Fish and Wildlife Service, Washington, D.C. 789pp.

Vorhies, C.T., and W.P. Taylor. 1933. The life histories and ecology of jackrabbits, Lepus alleni and Lepus californicus ssp. in relation to grazing in Arizona. Univ. Ariz. Agric. Exp. Stn. Tech. Bull. 49:1-117.

Wagner, F.H., and L.C. Stoddart. 1972. Influences of coyote predation on black-tailed jackrabbit populations in Utah. J. Wildl. Manage. 36:329-342.

Westoby, M. 1973. Impact of black-tailed jackrabbits (Lepus californicus) on vegetation in Curlew Valley, northern Utah. Ph.D. disser., Utah State Univ., Logan. 164 pp.

White, C.M., and S.K. Sherrod. 1972. Advantages and disadvantages of the use of rotor-winged aircraft in raptor surveys. Raptor Research V. 7, No. 3/4, pp. 97-104.

ACRONYMS

ADC	Animal Damage Control
APHIS	Animal and Plant Health Inspection Service
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973, as amended
FEIS	Final Environmental Impact Statement
FY	Fiscal Year
IMP	Interim Management Policy and Guidelines for Lands Under Wilderness Review
IWDM	Integrated Wildlife Damage Management
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NDOW	Nevada Division of Wildlife
NRS	Nevada Revised Statute
T/E	Threatened or Endangered Species
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WSA	Wilderness Study Area

GLOSSARY OF TERMS

Abundance: The number of individuals in a population of a species in a given unit of area.

Adverse Impact/Effect: A condition caused by a specific action that results in harm to an organism or its habitat.

Allotment: A specific area of public lands within which grazing use by one or more livestock operators is authorized.

Animal Damage Control Work Plan: An organized plan developed by Animal Damage Control and agreed to by the Bureau of Land Management (BLM) and the Nevada Department of Wildlife specifying when, where, how, and under what constraints predator management operations would be carried out. A map is attached showing planned control, restricted control, no control, and special protection areas. Concurrence by BLM is conditioned upon an accompanying environmental analysis and decision record which may modify the actions outlined in the plan.

Animal Behavior Modification: The use of scaring tactics to deter or repel animals that cause loss or damage to resources or property. It includes the use of electronic distress sounds, propane exploders, pyrotechnics, lights, scarecrows, water spray devices, and repellents.

Animal/Livestock Husbandry: The use of livestock management practices, such as shed lambing, changing livestock types or breeds, altering breeding seasons, employing herders and guard dogs, avoidance of areas with known high potential for livestock death, removal of livestock carcasses to avoid attracting coyotes, in order to reduce mortality due to adverse weather, predation, or other causes.

Aversive Agent: A substance with taste, odor. or feel that discourages a specific animal from using a food or place.

Bait: A lure or attractant consisting of a target animal's preferred food, fetid meat, urine, or musk.

Behavior Modification: See Animal Behavior Modification.

Beneficial Impact/Effect: A condition caused by a specific action that improves the well-being of an organism or its habitat.

Biological Opinion: The written result of a Section 7 Consultation, as required by the Endangered Species Act, conducted by Federal agencies with the US Fish and Wildlife Service. The opinion of the US Fish and Wildlife Service as to whether or not the Federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

Candidate Species: Any species not yet officially listed but is undergoing a status review or is proposed for listing as a threatened or endangered species.

Canid: A coyote, dog, fox, wolf, or other member of the dog (Canidae) family.

Carnivore: An animal that lives primarily on a diet of meat.

Confirmed Losses: Wildlife-caused losses or damages verified by Animal Damage Control.

Cooperator: An individual or agency working under agreement with the ADC program. These organizations may contribute funds, facilities, and personnel to conduct wildlife damage control.

Corrective Control: Predator control actions applied when damage is occurring or after it has occurred.

Cumulative Impacts: The impacts on the environment resulting from the incremental impact added to past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions occurring over time.

Denning/Den Hunting: The process of locating burrows where predators (primarily coyotes) have their young and then killing the pups. The adult predators may also be killed.

Depredating Species: An animal species causing damage to or loss of crops, livestock, other agricultural resources, or wildlife.

Depredation: The act of killing, damaging, or consuming animals, crops, or other agricultural resources.

Draft Environmental Impact Statement: The preliminary environmental document as required by Section 102 of National Environmental Protection Act, which requires that a statement of environmental effects for a major Federal action be released to the public and other agencies for comment and review prior to the final environmental document and the management decision.

Ecological Community: Any assemblage of populations living in a specific habitat.

Endangered Species: Any species which is in danger of extinction.

Environment: The surrounding conditions, influences, or forces that affect or modify an organism or an ecological community and ultimately determine its form and survival.

Environmental Assessment (EA): An analysis of the impact of a planned action to the human environment to determine the significance of the action and whether or not an environmental impact statement is needed.

Environmental Impact Statement (EIS): A document prepared by a Federal agency to analyze the anticipated environmental effects of a planned action or development.

Final Environmental Impact Statement (FEIS): A document prepared following incorporation of public and agency comments on the Draft EIS. This will be used as a guide for decisions on future program assessments and Environmental Assessments.

Fiscal Year (FY): A financial planning and accounting year. For the Federal Government, the fiscal year begins October 1 and extends through September 30 of the next calendar year.

Forage: Food for animals, especially when taken by browsing or grazing.

Frightening Devices: Pyrotechnics, propane exploders, flashing lights, balloons, streamers, distress calls, and other scare methods used to move or disperse wildlife that are causing damage or problems in particular areas.

Furbearer: An administrative or legal grouping of mammal species that are harvested for their fur.

Habitat: An environment that provides the requirements (i.e., food, water, and shelter) essential to development and sustained existence of a species.

Habitat Management: Protection or modification of a habitat to maintain, increase, or decrease its ability to produce, support, or attract designated wildlife species.

Humaneness: The perception of compassion, sympathy, or consideration for animals.

Integrated Wildlife Damage Management (IWDM): The process of integrating and applying practical methods of prevention and control to keep pest situations from reaching excessive damage levels, while minimizing potentially harmful effects of pest control measures on humans, nontarget species, and the environment.

Jeopardy/Jeopardize: To engage in an action that would reasonably be expected, directly or indirectly, to reduce the likelihood of both the survival and recovery of a threatened or endangered species by reducing the reproduction, numbers, or distribution of that species.

Lethal Control Methods/Techniques: Predator control methods or techniques that result in the death of animals (e.g., M-44s, aerial shooting, calling and ground shooting, and denning).

Local Population: The population within a specified geographical area causing damage to human health and safety, to other wildlife, or to forest, range, and agricultural resources.

Long-Term: An action, trend, or impact that affects the potential of a species to maintain its population through reproduction or immigration over an extended period of time. The effects of an action upon people, generally five years or more.

Memorandum of Understanding (MOU): An agreement between governmental agencies that specifies each agency's authorities and responsibilities in areas of mutual interest.

Mitigation: An action undertaken to avoid, minimize, rectify, reduce, or compensate for an adverse impact.

Modeling: Mathematical representation or simulation of real world processes, such as animal population responses to various harvest levels.

Monitor: To observe and record the activities or results of a particular project, population, or operation.

Multiple-Use Management: The concept of managing public lands for a variety of objectives.

National Environmental Policy Act (NEPA): Passed by Congress in 1969, NEPA declared a national policy to encourage productive harmony between humans and their environment, to promote efforts that will prevent or eliminate damage to the environment and the biosphere, and stimulate the health and welfare of humans, to enrich the understanding of the ecological systems and natural resources important to the nation, and to establish a Council on Environmental Quality. This act requires the preparation of EISs for major Federal actions. This basic national charter for the protection of the environment establishes policies, goals, and procedures to ensure that Federal agency actions protect, restore, and enhance the environment.

Nonlethal Control Methods/Techniques: Control methods or techniques that do not result in death of the target animal (e.g., live traps, repellents, fences, guard dogs, etc.).

Nontarget Animal Species: An animal or local population that is inadvertently captured, killed, injured, or otherwise adversely affected by wildlife damage control activities directed toward target animals.

Offset Jaw Trap: Traps constructed or altered so that a gap remains between the jaws after they are closed.

Offending Animal: The individual animal or local population within a specified area causing damage to human health and safety, to other wildlife, or to forest, range, and agricultural resources.

Pesticide: A chemical substance used to control pest wildlife.

Pesticide Use Proposal: Any program involving pesticide use on lands administered by the Bureau of Land Management is submitted as a pesticide proposal for review on a fiscal year basis. The proposal will include any pesticide that has been approved by the appropriate government agency(ies), such as the Environmental Protection Agency, for use in a specific formulation and for a specified purpose.

Population: A group of organisms of the same species that occupies a particular area.

Predacide: A pesticide used to kill predators.

Predator: An animal that kills and consumes another organism.

Predator Control/Management: Control actions directed towards the offending predator(s) responsible for damage.

Preventive Control/Killing: Control measures applied before damage begins.

Prey: An animal that is killed and consumed by a predator.

Public Land: Land that is not private. Land that is administerd, owned, or controlled by a government unit (i.e., federal, state, regional, county or other municipal jurisdiction). In the case of BLM, it is land owned by all of the people of the United States, and managed for their benefit under the authorities and principals outlined in the Federal Land Policy and Management Act.

Pyrotechnics: Fireworks or projectiles used to frighten wildlife.

Raptors: Carnivorous bird species (e.g., owls, hawks, falcons) that prey on other birds, amphibians, reptiles, and mammals.

Registered Chemical: A chemical that has been approved by the appropriate governmental agency(ies), such as the EPA, for use in a specific formulation and for a specified purpose, such as a rodenticide for control of rodents.

Repellent: A substance with a taste, odor, or feel that discourages a specific animal or species from using a food or place.

Restricted Use Pesticide: A pesticide that has been classified by EPA or an appropriate State agency as possessing the potential to cause adverse effects on the environment when not applied in accordance with label use restrictions. Restricted use pesticides can only be applied by or under the supervision of a certified applicator.

Rodenticide: A toxicant specifically designed to kill rodent species.

Section 7 Consultation: A provision under Section 7 of the Endangered Species Act requiring consultation between Federal agencies and the USFWS. The Federal agency identifies all potential impacts to threatened or endangered species that a particular activity might cause. The Federal agency ensures its actions are not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

Selective Control: Control actions that affect specific animals or animal species responsible for damage without adversely affecting other species occurring in the same habitat.

Shed Lambing: Holding ewes and newborn lambs in pens or sheds to provide food, shelter, and medical care during and after birth.

Short-Term: An action, trend, or impact that does not last long enough to affect the reproductive or survival capabilities of a species. The effects of an action upon people, generally five years or less.

Sight Bait: A visible animal carcass or part thereof or any other visible item used to attract target animals.

Significant Impact: An impact that will cause important positive or negative consequences to man and his environment.

Take: The capture or killing of an animal.

Target Species/Animal/Population: An animal or local population to which wildlife damage control activities are directed to alleviate damage to agriculture and nonagriculture resources. The same species may be either a target or nontarget, depending on the situation.

Threatened Species: Any species which is likely to become an endangered species within the foreseeable future.

Toxicant: A poison or poisonous substance.

Unconfirmed Losses: Losses or damage reported by resource owners or managers, but not verified by ADC personnel.

Verified Losses: See Confirmed losses.

Wilderness Study Area (WSA): Undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, and managed to preserve its natural conditions.

Wildlife: Any wild mammal, bird, reptile, or amphibian.

ATTACHMENTS

ATTACHMENT 1	Proposed "Plan For Integrated Wildlife Damage Management 1994 - 1998"
ATTACHMENT 2	National Memorandum of Understanding Between BLM and APHIS
ATTACHMENT 3	Nevada Memorandum of Understanding Between BLM and APHIS
ATTACHMENT 4	Nevada Divsion of Wildlife 1994-95 Furbearing Mammals and Mountain Lion Seasons and Regulations
ATTACHMENT 5	Methods of Control (from the 1994 FEIS for the ADC Program)
ATTACHMENT 6	EPA-Approved Registrations for Pesticides (from the 1994 FEIS for the ADC Program)
ATTACHMENT 7	Estimated Coyote Densities in the Western United States
ATTACHMENT 8	Informal Consultation on Annual Work Plan for Animal Damage Control on Bureau of Land Management Districts in Nevada
ATTACHMENT 9	ADC Directive 2.101 Wildlife Damage Control Options
ATTACHMENT 10	ADC Directive 2.105 The ADC Integrated Wildlife Damage Management Program
ATTACHMENT 11	ADC Directive 2.450 Traps and Trapping Devices

ATTACHMENT 1

USDA, APHIS, ANIMAL DAMAGE CONTROL
ELKO DISTRICT - BUREAU OF LAND MANAGEMENT

PLAN FOR INTEGRATED WILDLIFE DAMAGE MANAGEMENT
1994 - 1998

OUTLINE

I. Introduction

II. Basis for Program

III. Results of Previous Year's Program

IV. Responsibilities

V. Planned IWDM Activities

VI. Coordination with Nevada Department of Wildlife

VII. Map of Control Area

VIII. NEPA Compliance

IX. Endangered Species Act Compliance

X. Review and Concurrence

I. Introduction

This narrative and the associated map constitute the USDA, APHIS, Animal Damage Control (ADC) program's annual work plan for the public lands in the Elko District of the Bureau of Land Management (BLM) for the period January 1, 1994, to December 31, 1998. Annual addendums will provide documented catch and loss figures. This plan, along with the accompanying Decision Record prepared by BLM associated with the environmental analysis, specifies where, when, and under what conditions Integrated Wildlife Damage Management (IWDM) functions will be carried out as mutually agreed by the signatory parties hereto. This plan is supplemental to the national level memorandum (MOU), dated August 17, 1987, and to the State level MOU dated September 28, 1990, by the same parties. The purpose of this plan and the Decision Record is to formally outline the anticipated IWDM activities that will be conducted during the covered time period by ADC personnel on the public lands administered by the Elko BLM District.

II. Basis for Program

The ADC program is conducted pursuant to the Animal Damage Control Act of 1931, as amended, which authorizes the Secretary of Agriculture to conduct predator control activities on national forests and other areas of the public and private domain. The program's mission is to protect America's agricultural, industrial, and natural resources and to safeguard public health and safety. Within the U.S. Department of Agriculture, the ADC program is administered by the Animal and Plant Health Inspection Service. To implement an integrated wildlife damage management program on public lands, ADC and the BLM cooperate to develop an annual work plan for completion of the ADC mission.

Predators and rodents are integral components of natural ecosystems and as such are valued resources. The natural behavior of these species, however, frequently produces financial losses to the livestock industry and damages to other natural resources. Because of these losses and conflicts, effective wildlife damage management efforts are necessary. ADC program activities are directed at damage causing individuals or localized populations where historical or ongoing predator losses have been verified or are likely to occur. The overall objective of the ADC program's planned activities is to protect agricultural resources and human interests while minimizing the direct and indirect impacts to wildlife and the environment.

During FY-93 (October 1, 1992 through September 30, 1993), the Elko ADC office received 137 requests for assistance (Coyote 111, Lion 25, Bobcat 1,) on public lands in the Elko District. Losses recorded on public lands in the Elko District and verified by ADC were as follows: (Coyotes) Lambs 381, Ewes 59; (Mt. Lions) 79, Ewes 32; (Bobcats) Lambs 2. Total verified losses by all predators were 553 animals. The estimated value of losses were: Lambs $29,945.00 Ewes $9,062. The total estimated value for confirmed losses was $39,007.00.

Studies have shown that without the current level of control the expected losses would have been several times higher. In a 1981 study, Mr. Guy Connely of Denver Wildlife Research Center, calculated that livestock losses without predator control would have been seven times higher. Additional information on the economic impacts to the livestock industry without predator control can be found in the 1979 programmatic EIS on pages 138-142.

In responding to requests for assistance, there were 811 coyotes taken by aerial hunting, and 322 coyotes, 6 lions, 5 ravens, and 1 bobcat taken by ground methods on BLM lands in the Elko District. The Elko District ADC office received no requests for assistance in Wilderness Study Areas (WSA's). There was one nontarget bobcat destroyed during the reporting period. Nontarget animals that are inadvertently captured are always released on site unless they are determined to have suffered mortal injuries. Incidental take of nontarget animals in recent years has been minimal and is not expected to increase.

Sustained control operations have been occurring on the planned control areas for the last 20 years. ADC records and the 1993 Nevada Upland Game, Furbearer, Mountain Lion, and Migratory Game Birds; Status and Hunting Season Recommendations indicate that statewide coyote populations are increasing. Statewide mountain lion populations are in good condition meaning they are high and stable with ranges expanding throughout the State. NDOW's recent breeding bird surveys indicate raven numbers have increased substantially in Nevada.

The following is a comparison of the ADC and sport hunter harvest of furbearers taken in NDOW Region II in the 1992-93 season. The NDOW Region II is comprised of the following counties: Elko, Lander, Eureka, and White Pine; and the following management units: 6, 7, 10, 11, 12, 13, 14, and 15. These counties and units cover most, or all, of the Elko BLM District, and some areas outside. In NDOW Region II, sport hunters harvested 1,689 coyotes and 89 mountain lions. In comparison, ADC take in FY-93 in those 4 counties was 4,500 coyotes, 30 mountain lions, and 7 bobcats.

The above discussion of losses, harvest statistics, stable to increasing predator population levels, and lack of impact on nontarget species, establishes the need and basis for the continuing wildlife damage management program on the Elko BLM District.

III. Results of Previous Year's Program

A. Animals taken by ADC on public lands in the Elko BLM District during FY-93: Coyote - 811 aerial; 177 trapped; 31 shot; 62 called and shot; 31 dogs; 19 snared and 2 dens removed. Mt. Lion - 6 by dogs. Bobcat - 1 trapped. Ravens - 5 shot One nontarget bobcat was destroyed.

B. Animals taken by sport and fur harvest in NDOW Region II: Coyote 1689; Mountain Lion 89; Bobcat 263; Gray fox 23; and Kit fox 19.

C. Population trends by species. NDOW estimates population trends through sport and fur harvest. ADC estimates population trends through predation and predatory animal harvest. Both estimates show that coyote and mountain lion populations are stable or increasing in number.

D. Nonlethal Controls: Numerous nonlethal control methods are employed by Nevada ranchers in attempts to reduce livestock predation. Sheep ranchers utilize lambing sheds on private property but public land management plans rarely allow for the construction of buildings on the public domain. All sheep ranchers also employ herders and camp tenders, who along with their herding dogs and burros, live with the sheep 24 hours a day. Some producers have issued rifles to the herders who shoot into the air or at coyotes observed near the sheep.

Approximately 60% of sheep producers in the Elko District have purchased and use at least 1 livestock guarding dog and some up to 3 dogs per band of sheep. These dogs live with the sheep and exhibit aggressive behavior towards approaching predators. Guard dogs produce varying results depending on the training, terrain, and predator population. A publication entitled "Livestock Guarding Dogs: Protecting Sheep from Predators" has been distributed to all Nevada sheep ranchers and is available from any ADC office. A Fact Sheet entitled "Livestock Guarding Dogs" has also been disseminated and is available from any ADC office.

The electronic guard is a mechanical scare device which emits sirens and strobe lights intermittently throughout the night. Three Nevada ranchers have purchased these devices and eight additional units are available for loan from ADC district offices. Research studies have shown the electronic guard can produce good results in open range sheep allotments when implemented properly. A Fact Sheet entitled "The Electronic Guard: A New Tool in Predation Control" has been disseminated and is available from any ADC office. A publication entitled "Producers Guide to Preventing Predation of Livestock" has been distributed to all Nevada Ranchers and is available from any ADC office. Two additional Fact Sheets entitled "Controlling Damage on Public Lands" and "Effects of Animal Damage Control on Predator Populations" are also available. A new publication entitled "Guard Llamas" has recently become available to interested parties.

Several other Nevada ranchers have used propane exploders and flashing construction lights with good results on bands of dry ewes. One producer used a cassette tape player to broadcast loud rock and roll music all night. The rancher reported good results for a limited time. The Pred-X ear tags (an unregistered pesticide), however, did not produce any noticeable reduction in predation when purchased and implemented by ranchers.

E. Monitoring. Monitoring efforts include initial and continuing assessments of resource losses to determine the species responsible for depredations and the need for control efforts to begin or continue. These assessments include consideration of depredation patterns observed in previous years to identify areas where losses can be expected to recur. The evaluations are used to determine the need to initiate or continue both preventative and corrective control efforts.

Records are collected to document all animals taken as a result of ADC operations. These data provide the basis for the program's annual report of accomplishments and a means of evaluating the relative impact of ADC actions to sport and other harvest. ADC and NDOW meet annually to discuss management issues of mutual concern including the impacts of depredation control to both target and nontarget species. This coordination effort provides an annual reassessment to assure that depredation take, in conjunction with sport and other harvest, does not significantly impact the affected species.

As of October 1, 1992, ADC field employees have been required to use pan tension devices on all leghold traps. These tension devices require four pounds of pressure to close the trap. This significantly reduces the probability of capturing small nontarget animals.

The combined harvest by sport hunters and ADC field employees was 6,189 coyotes in NDOW Region II. ADC employees accounted for 73% of this total. The combined harvest by sport hunters and ADC field employees was 119 Mt. lions in NDOW Region II. ADC employees accounted for 25% of this total. The combined harvest by sport hunters and ADC field employees was 270 bobcats in NDOW Region II. ADC employees accounted for 2% of this total.

The ADC harvest of coyotes increased slightly and mountain lions decreased in 1993 Statewide. This increased coyote harvest was not a significant departure from the previous year's harvest. ADC's mountain lion harvest, however, declined 35% from the all time record harvest in 1992. The sport and fur harvest of coyotes declined slightly in 1993 and mountain lions increased dramatically (54%) between 1992 and 1993. NDOW population estimates indicate both species are increasing, therefore the relative impacts continued to be minimal for both species.

The relative impact of ADC operations in previous seasons to both target and nontarget species has been determined to be minimal. ADC actions were negligible in relation to all other affected species.

IV. Responsibilities

The responsibilities of the BLM are the same as given in Article 7 of the Nevada MOU dated September 28, 1990. ADC responsibilities are the same as those given in Article 6 of the above MOU.

V. Planned ADC Activities

A. Livestock Protection

1. Sheep Protection

SEASONS OF CONTROL - Control emphasis will be placed on the time period immediately preceding and during actual livestock use. ADC activities on lambing, summer, and winter ranges will occur just prior to and during periods of livestock use.

TYPES OF CONTROL - Leghold traps, aerial hunting, shooting, denning, snares, M-44's, and trained dogs will be used as appropriate. Emphasis will be on coyote damage control but bobcat and mountain lion control will also be accomplished when these species are found to be responsible for losses.

Eggs treated with the chemical DRC 1339 (Starlicide) may be needed to control raven depredations. ADC will complete the requisite Pesticide Use Proposal (per BLM Manual Section 9011) which will then be submitted by BLM to WO-230 for approval prior to any pesticide application (M-44's are considered a pesticide). Advance notification will be given to the district manager prior to pesticide application. Use of pesticides will be restricted primarily to spring lambing and calving ranges. No pesticides are proposed for use in Wilderness Study Areas or designated Wilderness Areas.

2. Cattle Protection

SEASONS OF CONTROL - Any time of year that losses occur. Losses are normally confined to the seasons when small calves are present.

TYPES OF CONTROL - Aerial hunting will be the primary control method used but steel traps and trained dogs may be employed as appropriate.

B. Special Considerations

1. All control programs will be conducted within new and existing ADC policies, BLM Manual 6830 (8/88), Nevada State ADC-BLM MOU, and all applicable State and Federal laws.

2. Areas of Control: ADC activities will be limited to the primary control areas marked in green on the maps attached to the plan, except as provided under EMERGENCY SITUATIONS.

3. Public Safety, No Control Zones: No control devices are allowed within the public safety or no control areas shown in red on maps within the plan and/or specified below, unless needed for public health or safety.

   a. Within three miles of any community, including unincorporated towns such as Spring Creek, Ryndon, and Lucky Nugget.
   b. Within one-quarter mile of any State or Federal Highway.
   c. Within one mile of all developed recreation sites, major mines, and isolated residences.
   d. Within one-half mile of the firewood cutting

areas identified on Maps 2A-K.

e. Within the South Fork of the Owyhee River Canyonlands area from the Gauging Station in T. 45 N., R. 49 E., Sec. 16 MDM north to the Idaho/Nevada border during the months April through June.

4. Posting Control Areas: ADC will post signs to provide adequate warning of all areas where control devices are in use. Enough signs will be installed at commonly used access points to ensure public safety.

5. Modification of Control Areas: The BLM District Manager may, at any time, restrict or modify IWDM activities on the public lands for multiple use management or public safety reasons.

6. Monitoring: Within the primary control areas (green on map 1 of the plan), ADC will monitor target species population levels through the methods outlined under "Monitoring" within the plan to determine annual trends. The intent of authorization of this plan is that IWDM efforts will be directed towards offending depredating animals while ensuring viable populations of target species continue to remain part of the ecosystem in these areas. At the very least on an annual basis, this monitoring data will be evaluated jointly by ADC, NDOW, and BLM to determine the extent of control efforts and the modification of those efforts if required to meet population objectives.

7. M-44 Use: Use of M-44's will generally be allowed only in the primary control areas (green on map 1 of the plan) and only in compliance with EPA's 26 restrictions and appropriate State laws. Because M-44's are a chemical toxicant, any proposal for their use, must be submitted to Washington Office-230, BLM on a Pesticide Use Proposal for review and concurrence. Prior to deploying M-44's, notification will be provided to the appropriate BLM Area Manager. This notification will include a written statement with the following:

   a) the general area where the M-44 units are proposed for use, b) the expected period of use, and c) the losses documented to justify their use.

BLM must be notified each time M-44s are used, to enable it to answer any questions regarding the use of this toxicant in the target area.

The BLM will be notified as soon as practical as to the number and general locations of all M-44's placed. During M-44 use periods, monthly reports will be provided to the BLM Area Manager to summarize the number and species of the animals taken, the number of M-44's being used, and the losses documented in the areas where M-44's are being used.

On a case-by-case basis use of M-44's may be allowed outside of primary control areas (green on map 1 of the plan) only after the BLM District Manager's approval. Approval is contingent upon prior written notification by ADC identifying the extent of the problem, the area requiring control, and the length of time and amount of M-44 use required.

Signs will be posted at commonly used access points and other required locations in accordance with ADC policy, and EPA's regulations in order to insure proper public notification.

During upland bird seasons proposed M-44 use will be coordinated between NDOW and ADC, so heavily hunted areas or areas of bird concentration can be avoided in an effort to prevent accidental deaths to domestic dogs or public contact with M-44's.

M-44 use will be limited to vegetation types not dominated by pinyon/juniper during the period 11/15 through 12/25 to reduce possible public contact during the Christmas tree cutting season.

8. Wilderness study areas are not within primary control areas under this plan. Approval by BLM will be required before any control actions are taken within wilderness study areas identified on Maps 3A-H. If control activities are required under emergency procedures then all ADC control activities within wilderness study areas will meet the following stipulations:

   a. Prior authorization will be sought from the BLM District Manager before any control action is implemented. In the case of confirmed losses to mountain lions which occur outside normal duty hours, control efforts may proceed with notification to occur as soon as practicable but no later than the following working day. Case by case authorizations will be sought to insure that all appropriate precautions are exercised to conserve the wilderness values which exists in these sensitive areas.

b. District-wide wilderness study area maps will only be used for general reference. Maps with a scale of at least one half inch to the mile will be used in the field during IWDM activities to determine wilderness study area boundaries.

c. All control operations to be conducted in wilderness study areas will be in compliance with "The Interim Management Guidelines for Lands Under Wilderness Review." These guidelines read in part:

"Animal Damage Control activities directed at individual offending animals....may be permitted, so long as this will not jeopardize the continued presence of any species in the area."

The primary (selective) method of removing offending animals will be with firearms either from the ground or air. Other control methods may be proposed on a case-by-case basis as appropriate. Offending animals will normally be taken within two weeks of the depredation episode. Any extension beyond two weeks must be justified by ADC and approved by the BLM District Manager prior to an extension being granted.

d. Control actions and losses within wilderness study areas will be documented to provide a complete record for BLM and ADC managers.

e. It is understood that all proposed control activities within BLM administered wilderness study areas require prior approval by the BLM District Manager and will meet other stipulations specified in the BLM Manual 6830 on Animal Damage Control (8/4/88) Section 4C. M-44's will not be used in wilderness study areas except for the protection of federally designated threatened or endangered species.

EMERGENCY SITUATIONS

Situations may develop where wild animal vector or local damage problems occur on public lands that jeopardize health or property, that fall outside the primary control (green) areas designated on the maps. If confirmed significant losses of livestock (several animals of a herd,) or confirmed significant harm to human health (e.g. rabies or bubonic plague outbreaks) occur, immediate action may be taken to eliminate or curtail the problem using the following procedures.

A. If the request is not from NDOW or BLM, then the affected individual(s) must submit loss data to and request control from ADC.

B. ADC evaluates the loss data and determines whether emergency control measures are warranted. If immediate action is warranted and the area of concern lies within the coordinated control area (yellow), outside of wilderness study areas (Maps 3A-H), and does not involve the public safety zones (red) designated on the maps attached to the plan, ADC conducts necessary control actions using permitted methods and notifies the Bureau as soon as possible.

C. If time is not of the essence, then ADC will provide the BLM District Manager a project request form verifying the loss by the affected individual and showing that such loss has recently occurred, and a brief written explanation of where the control measures are proposed, the methods to be used, and how long the activities will continue.

D. The BLM District Manager will evaluate the control request, based on the information provided, decide whether to approve control operations, and notify the appropriate ADC official.

E. If control operations are authorized, the damage control request and associated information will be added to the plan and attached maps.

F. In instances where control activities of a nature that are not identified in this plan become necessary; then control efforts can be considered on a case-by-case basis, and initiated upon concurrence by all three signatory agencies to this plan. The documentation associated with each such incident will subsequently be added to the plan.

VI. Coordination with Nevada Department of Wildlife

A. Consultation has determined that continuation of ADC control activities and sport harvest, as outlined in this plan, will not adversely affect target or nontarget species in the control areas.

B. The NDOW has no current requests pending for ADC to control predators or rodents on public lands in the district to benefit other wildlife species, such as bighorn sheep or pronghorn antelope, that have been reintroduced to historic ranges. This type of request, if received, would be handled according to stipulations listed elsewhere in this plan.

C. ADC and NDOW meet annually on a statewide basis to discuss mutual interests, coordinate responsibilities and activities, review control and management accomplishments, and to resolve potential conflicts.

VII. Map of Control Areas

Color coding is as follows:

RED - Human safety zones. Areas where control is prohibited except in case of emergency. These are areas around streams, developed campgrounds, communities, and along major highways.

GREEN - Planned primary control areas. These areas generally are domestic sheep allotments and trailing areas where control measures may be necessary to effectively limit depredations.

YELLOW - Coordinated control zones. Areas where no control is scheduled. In cases where local damage problems may arise that jeopardize human health, safety, or property, immediate action may be taken by ADC to eliminate or curtail the problem upon receipt of a request for assistance. Using the procedures identified above under Emergency Situations, the request for such action will be coordinated between BLM and ADC as soon as practicable, even though immediate steps may have been initiated. Follow up reports of requests received, action taken, and results realized will be provided.

VIII. NEPA Compliance

The mammalian control actions contemplated in this plan are equivalent to those evaluated in the Mammalian Predator Damage for Livestock Protection in the Western United States, Final Environmental Impact Statement (USDI 1979). A further evaluation of the impacts of this control program is described in the 1990 Draft EIS for the ADC program and the Supplement to the Draft dated January 1993.

IX. Endangered Species Act Compliance

ADC completed an informal review, on June 12,1992, on the proposed action with the Reno Field Station of the U.S. Fish and Wildlife Service regarding possible impacts to listed threatened or endangered plant and animal species. This consultation concluded the proposed action is not likely to adversely affect the continued existence of any listed or candidate threatened or endangered species.

X. Review and Concurrence

This plan covers the anticipated Integrated Wildlife Damage Management activities of the USDA, APHIS, Animal Damage Control program for 1994-1998 on public lands administered by the Elko District-Bureau of Land Management.

This plan is based on past and anticipated requests for IWDM services by grazing permittees, NDOW, BLM, and other agencies and individuals. It is mutually agreed that all ADC activities will be conducted as contemplated in this plan or as further stipulated and approved on a case by case basis.

An annual meeting will be held by the participating parties in October or November to review the ADC plan for the next calendar year.

This plan in combination with the record of decision associated with the environmental analysis prepared by BLM for this plan, authorizes ADC activities on public lands administered by the Elko District subject to the constraints specified, and the requirements of all pertinent Federal and State laws, Executive Orders, and regulations. It is mutually agreed that all ADC activities will be carried out according to this plan and the record of decision.

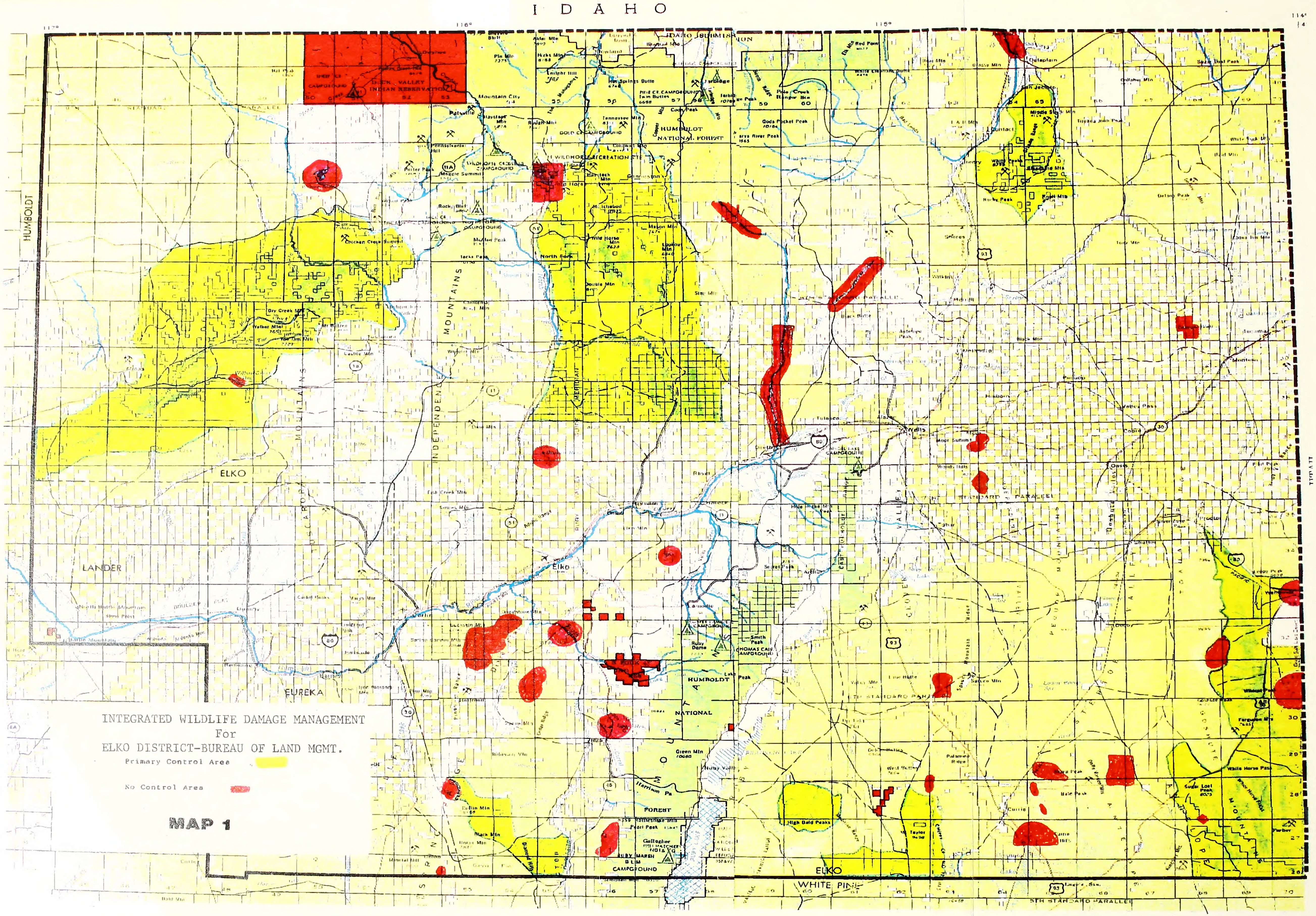
Submitted by:

Elko District Supervisor, ADC — Date

Reviewed by:

Manager Region II, NDOW — Date

Elko District Manager, BLM — Date

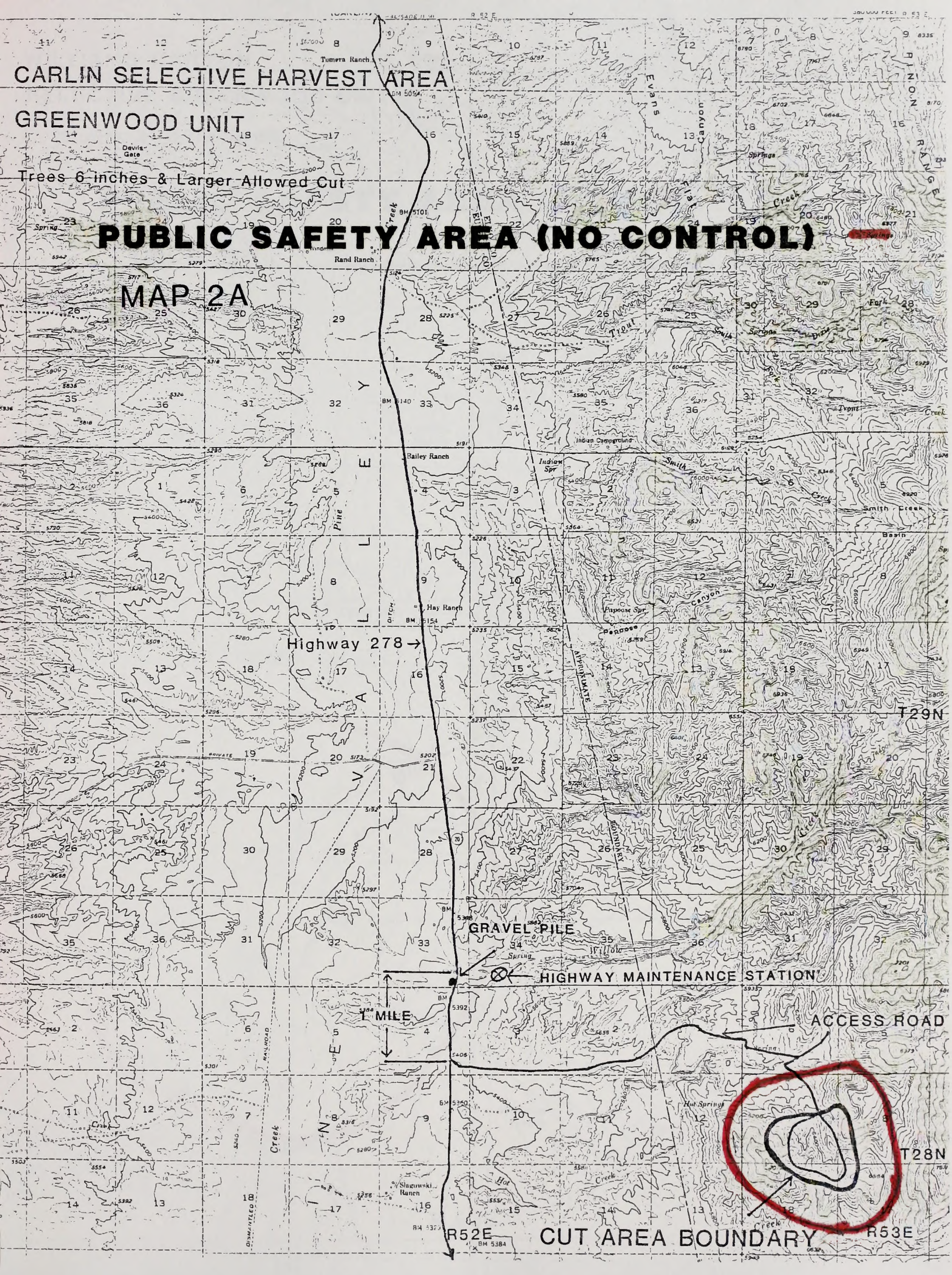


INTEGRATED WILDLIFE DAMAGE MANAGEMENT
For
ELKO DISTRICT-BUREAU OF LAND MGMT.

Primary Control Area 🟨

No Control Area 🟥

MAP 1


CARLIN SELECTIVE HARVEST AREA

GREENWOOD UNIT

Trees 6 inches & Larger Allowed Cut

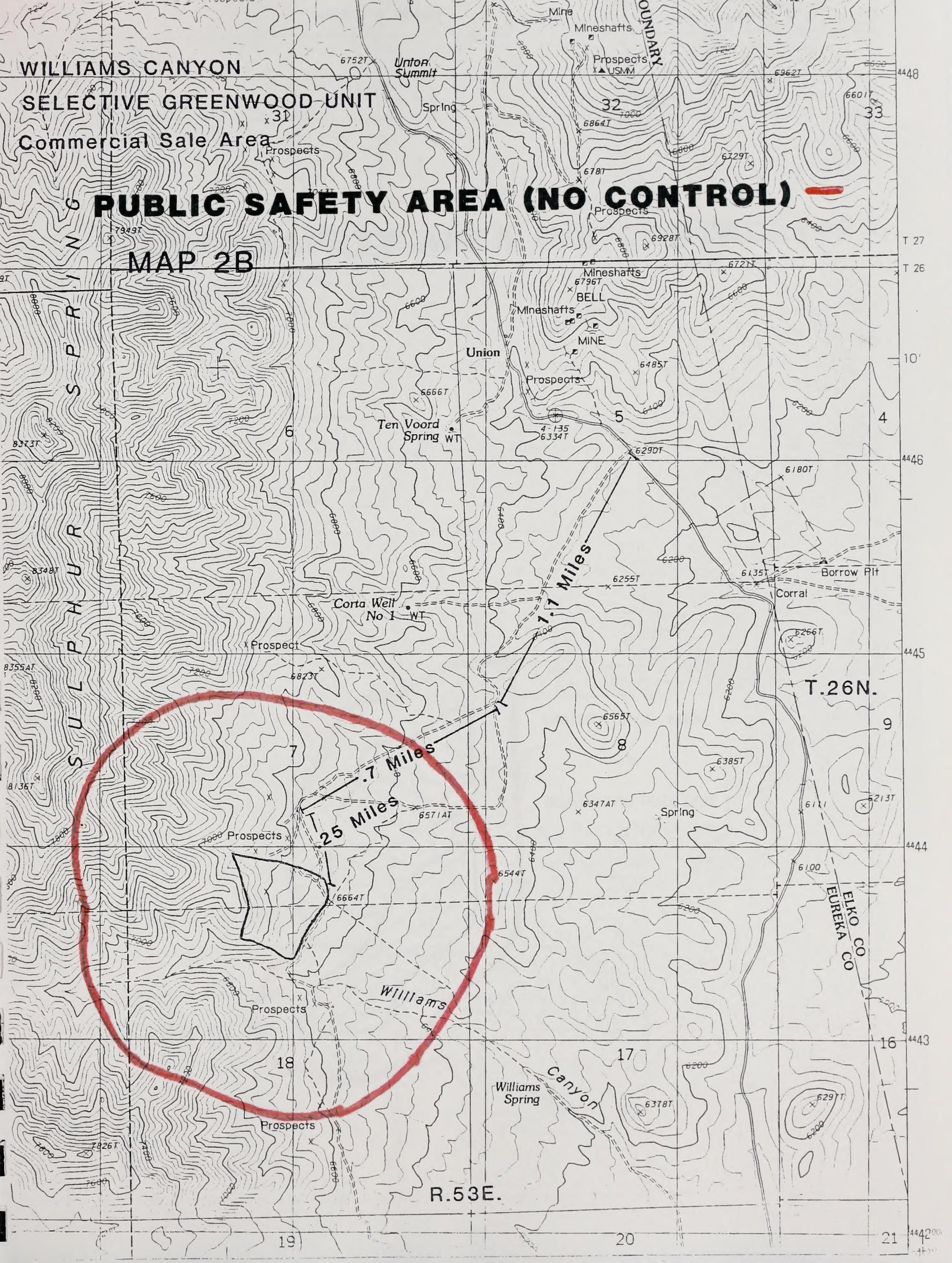
PUBLIC SAFETY AREA (NO CONTROL)

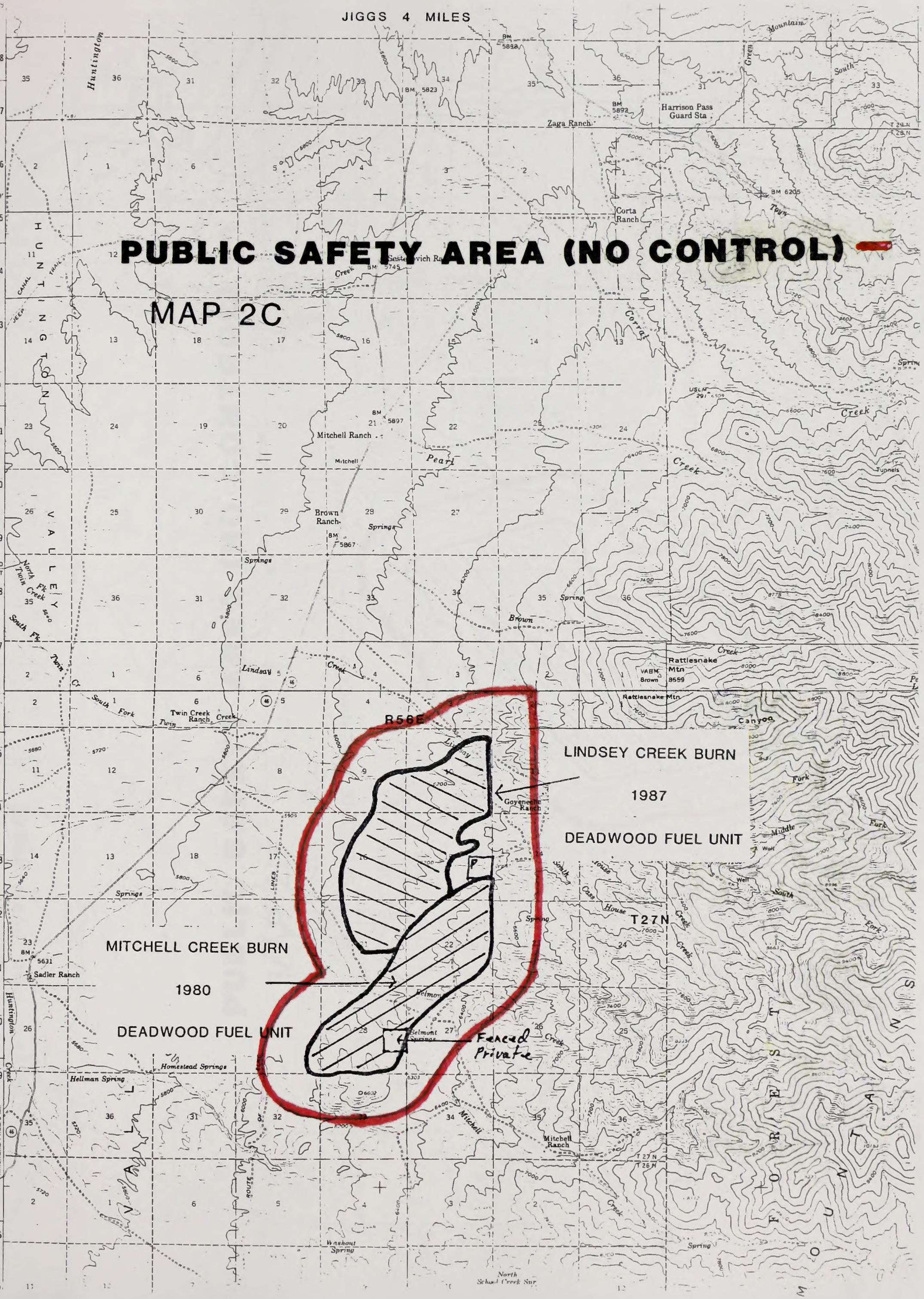
MAP 2A

WILLIAMS CANYON
SELECTIVE GREENWOOD UNIT
Commercial Sale Area

PUBLIC SAFETY AREA (NO CONTROL) —

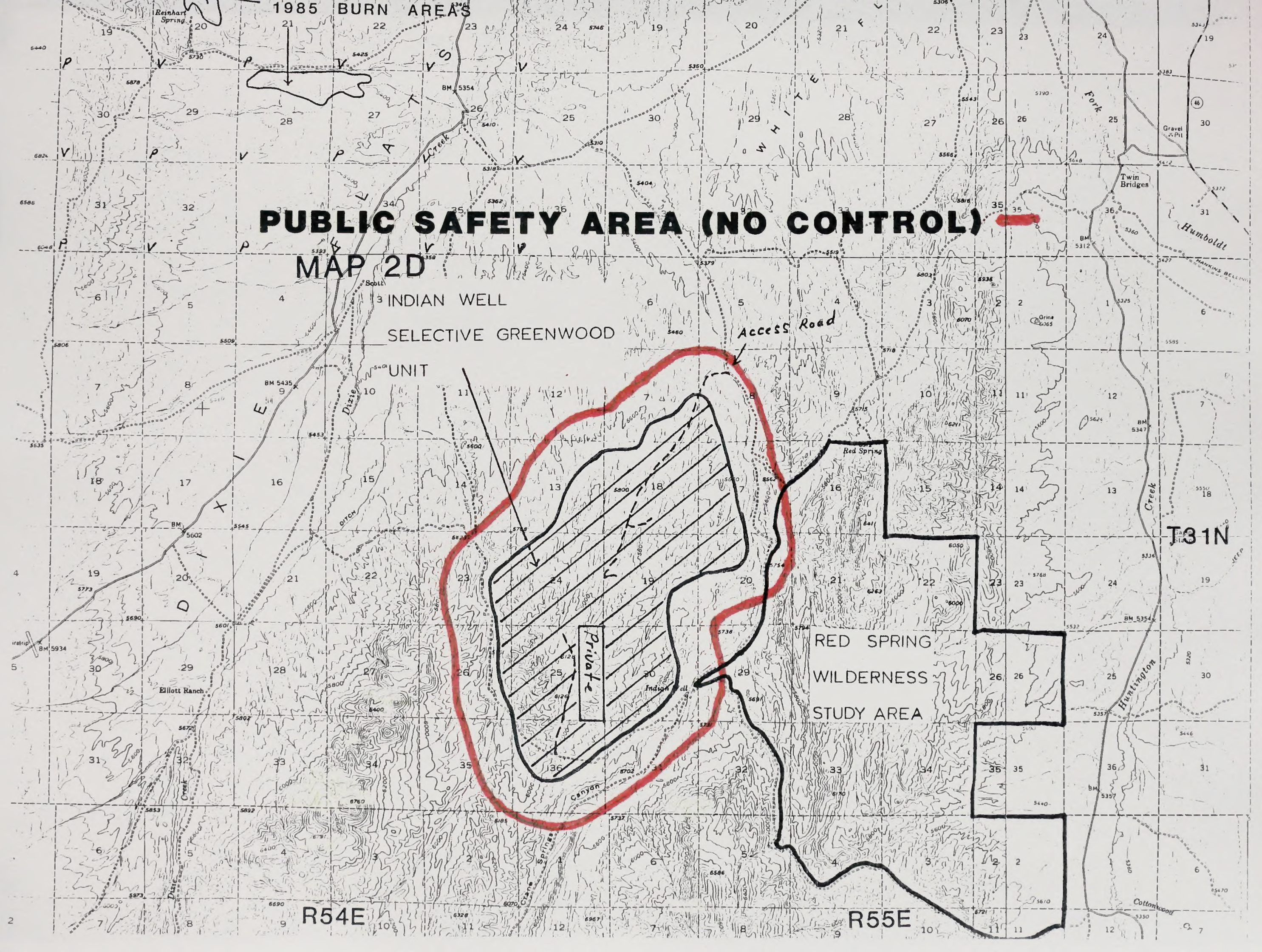
MAP 2B

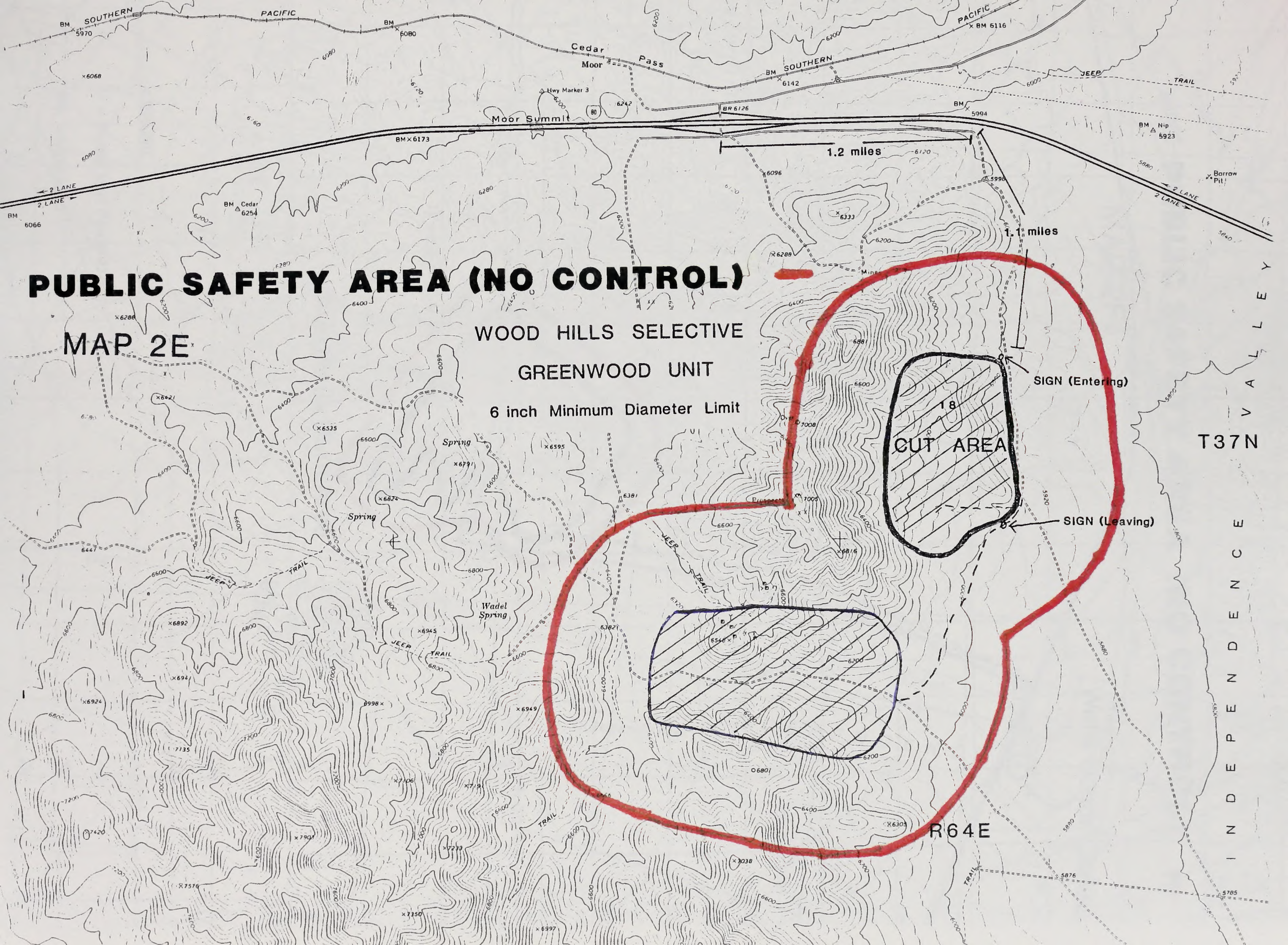




PUBLIC SAFETY AREA (NO CONTROL)

MAP 2C


1985 BURN AREAS
PUBLIC SAFETY AREA (NO CONTROL)
MAP 2D
INDIAN WELL
SELECTIVE GREENWOOD
UNIT
Access Road
Private
RED SPRING
WILDERNESS
STUDY AREA
T31N
R54E
R55E
Red Spring
Indian Well
Reinhart Spring
Elliott Ranch
Twin Bridges
Gravel Pit
Humboldt
Fork
Creek
Huntington
Cottonwood
Dixie
Canyon
Crane Springs
Ditch
Scott
WHITE FLATS
DIXIE
BM 5354
BM 5435
BM 5602
BM 5934
BM 5312
BM 5347
BM 5354
BM 5357
Airstrip
Hankins Bell
Jeep



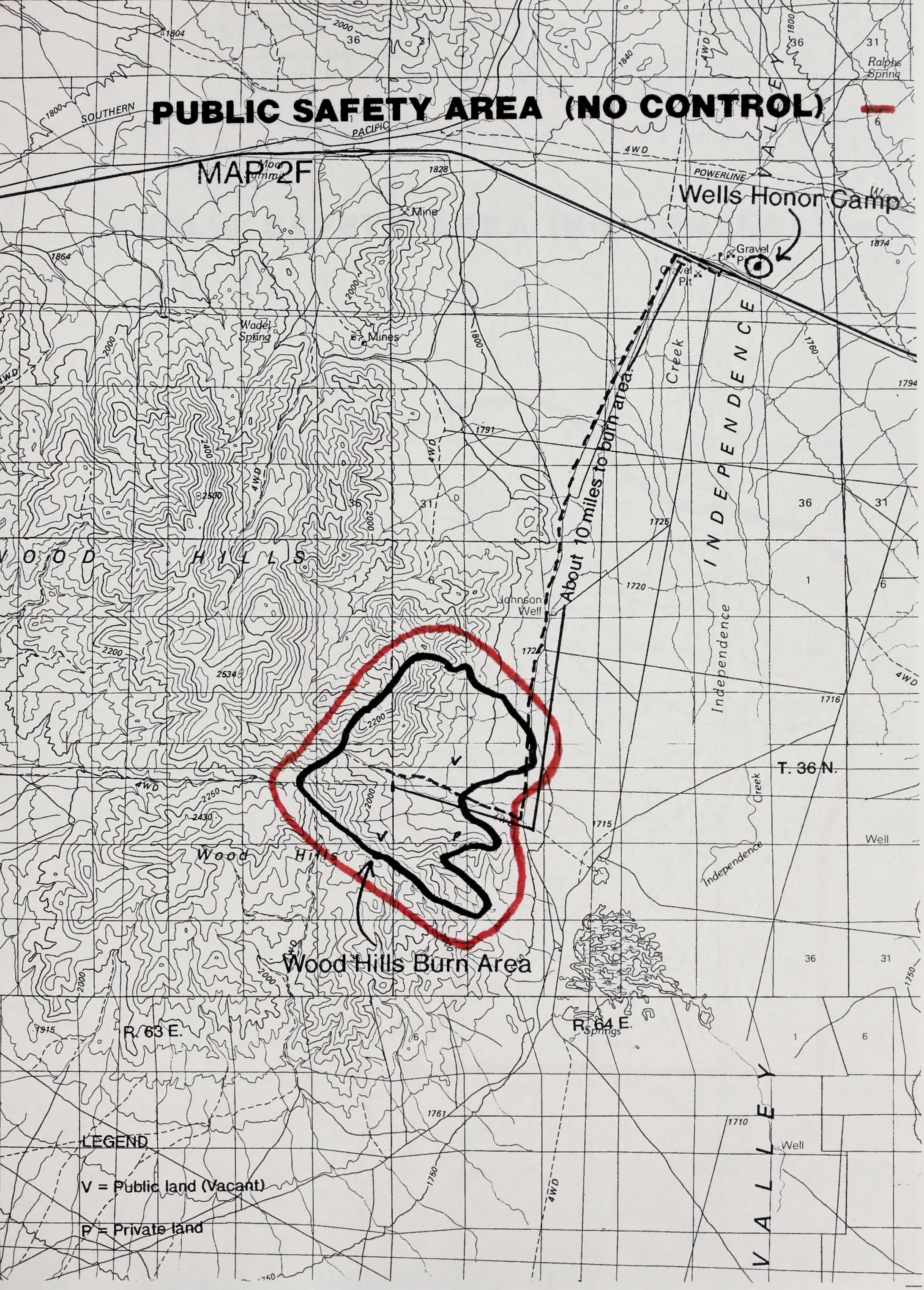
PUBLIC SAFETY AREA (NO CONTROL)

MAP 2E

WOOD HILLS SELECTIVE

GREENWOOD UNIT

6 inch Minimum Diameter Limit



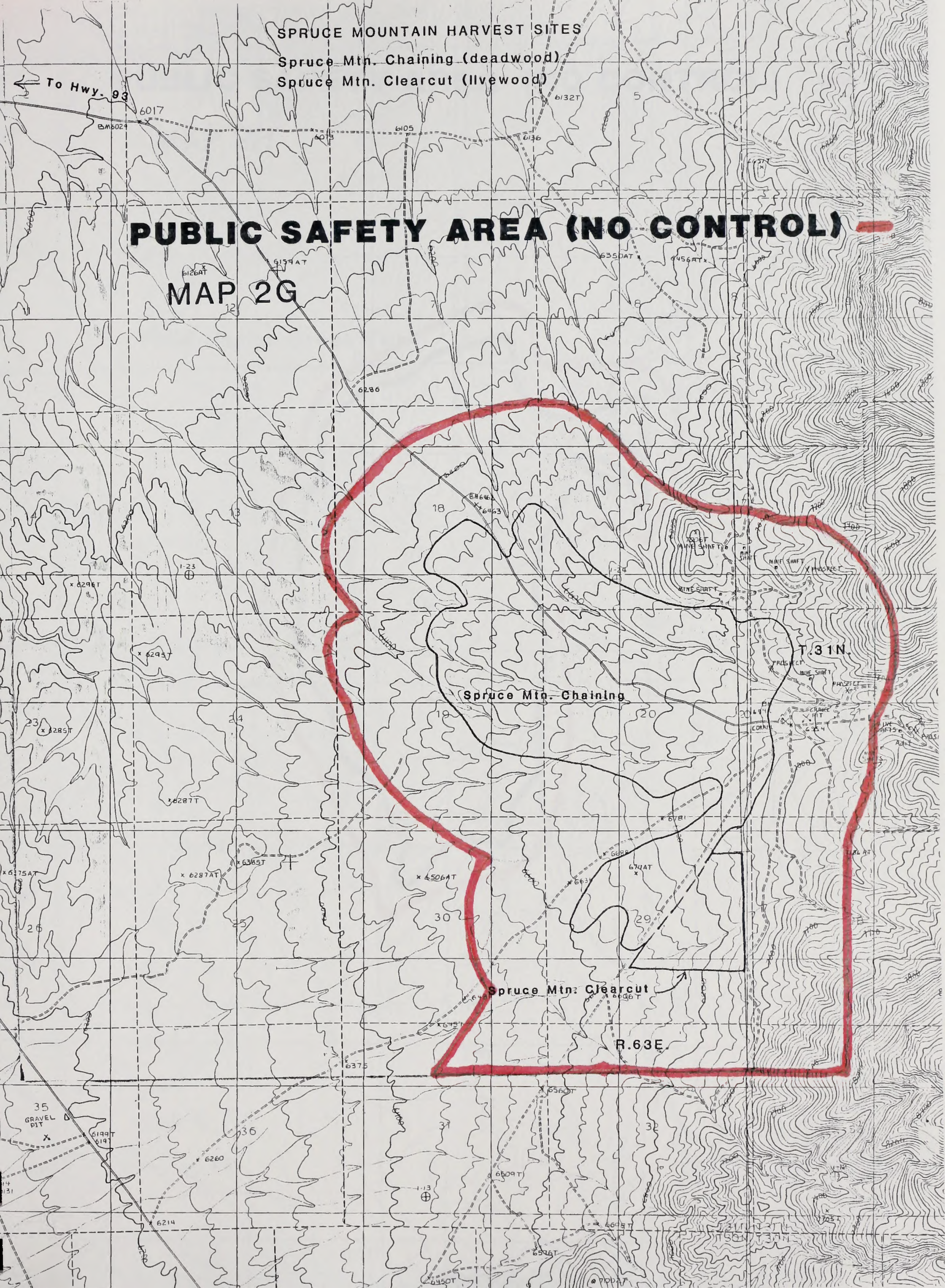
PUBLIC SAFETY AREA (NO CONTROL) —

MAP 2F

LEGEND

V = Public land (Vacant)

P = Private land



SPRUCE MOUNTAIN HARVEST SITES

Spruce Mtn. Chaining (deadwood)

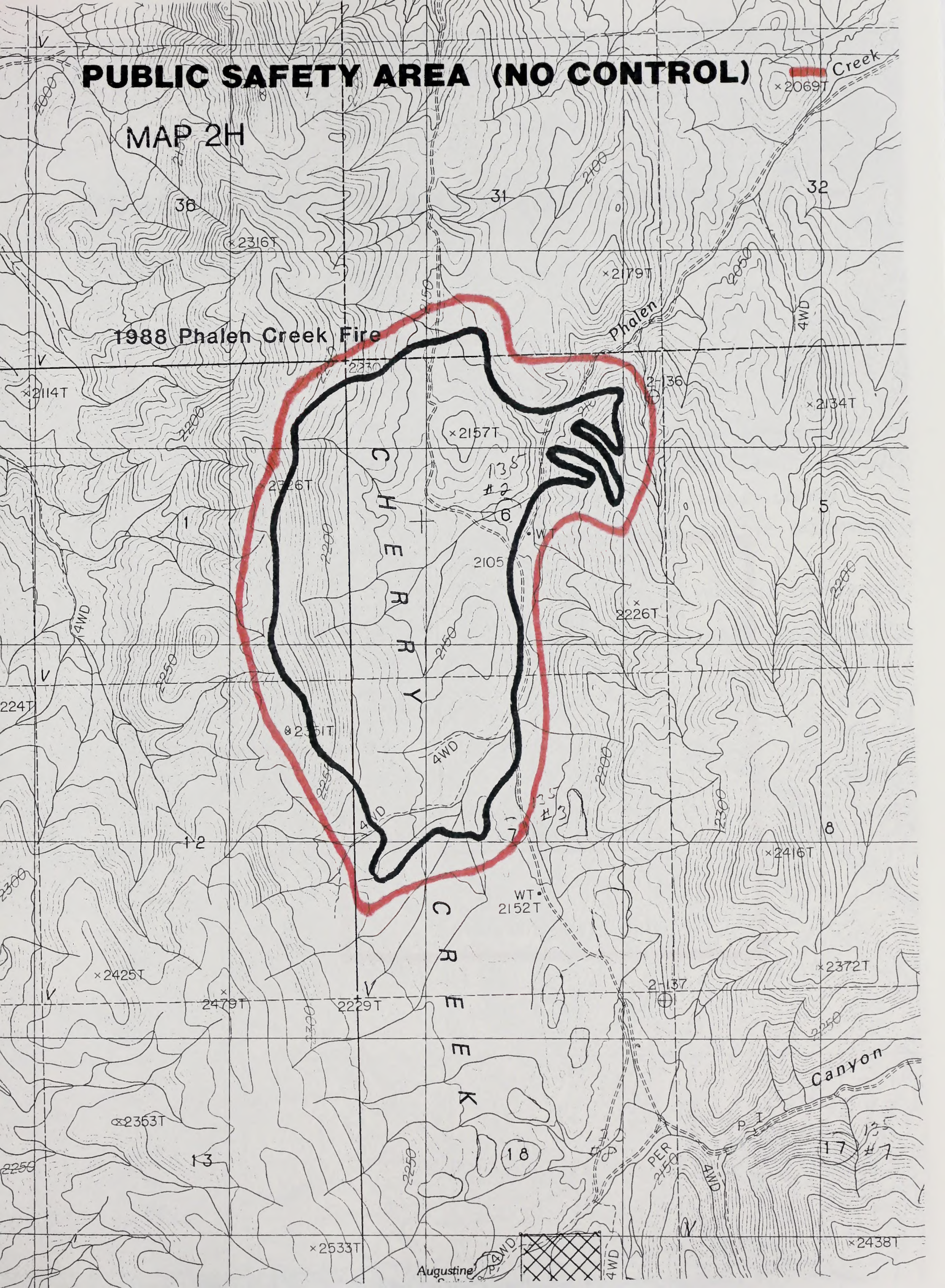
Spruce Mtn. Clearcut (livewood)

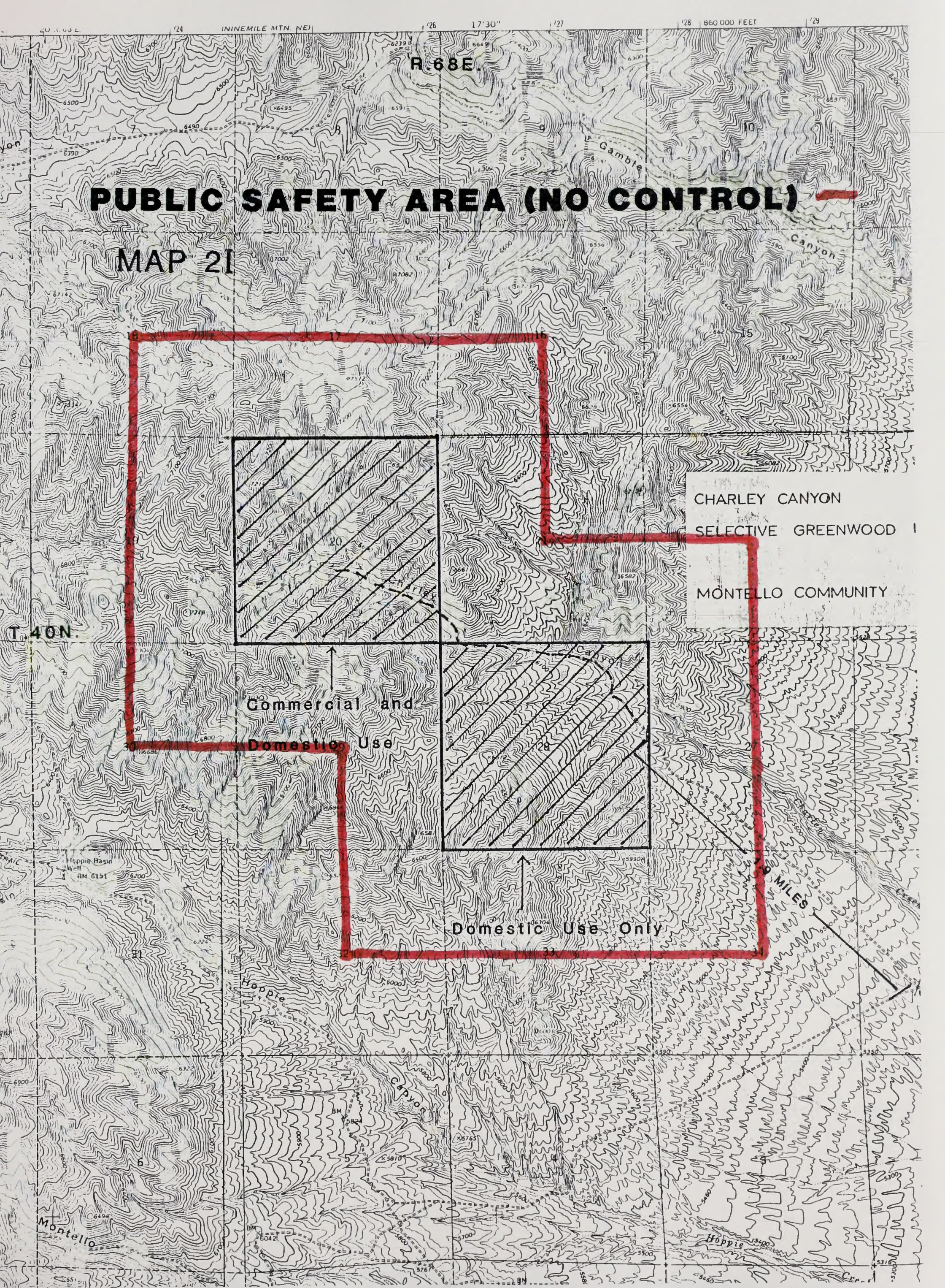
PUBLIC SAFETY AREA (NO CONTROL)

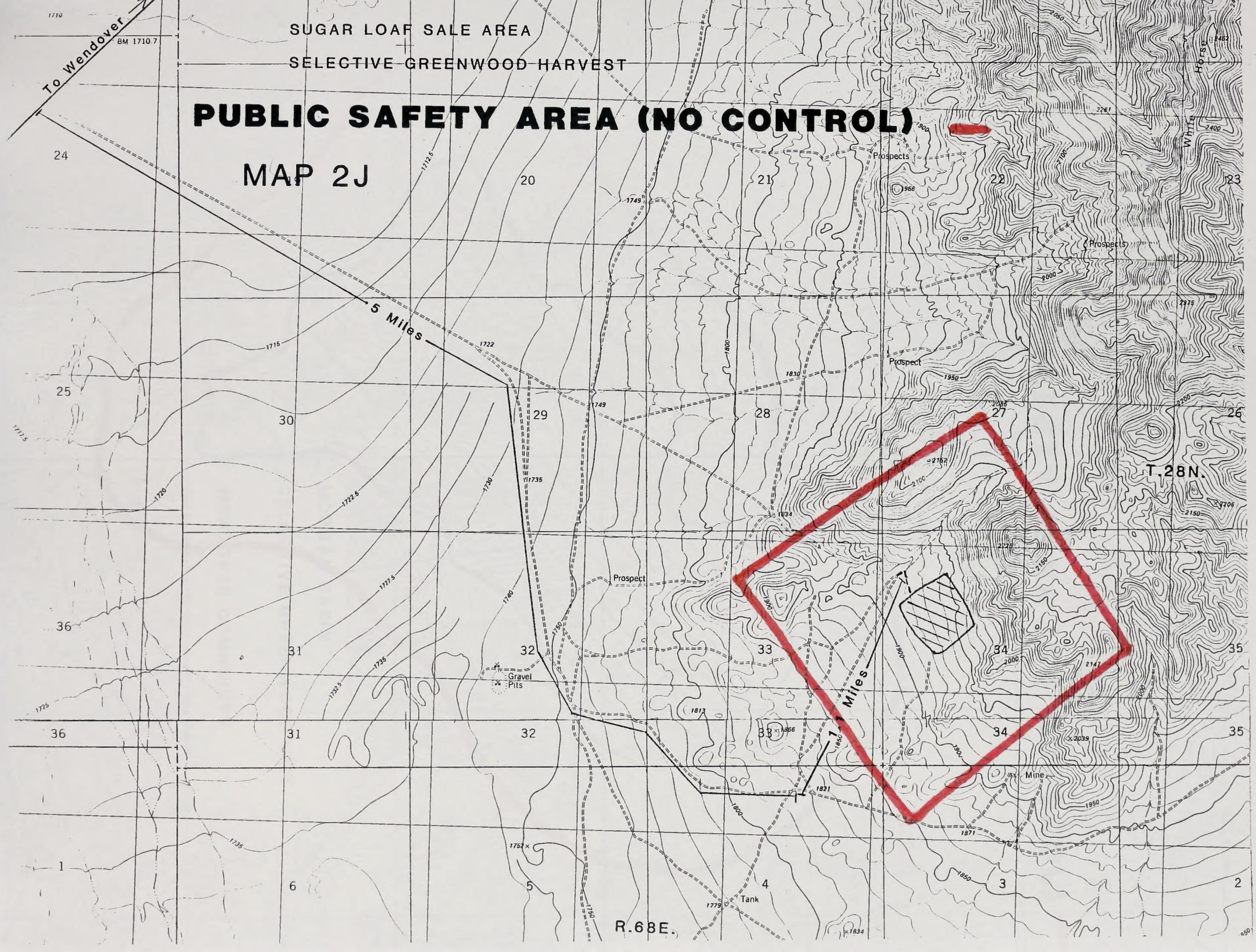
MAP 2G

PUBLIC SAFETY AREA (NO CONTROL) 🟥

MAP 2H







SUGAR LOAF SALE AREA

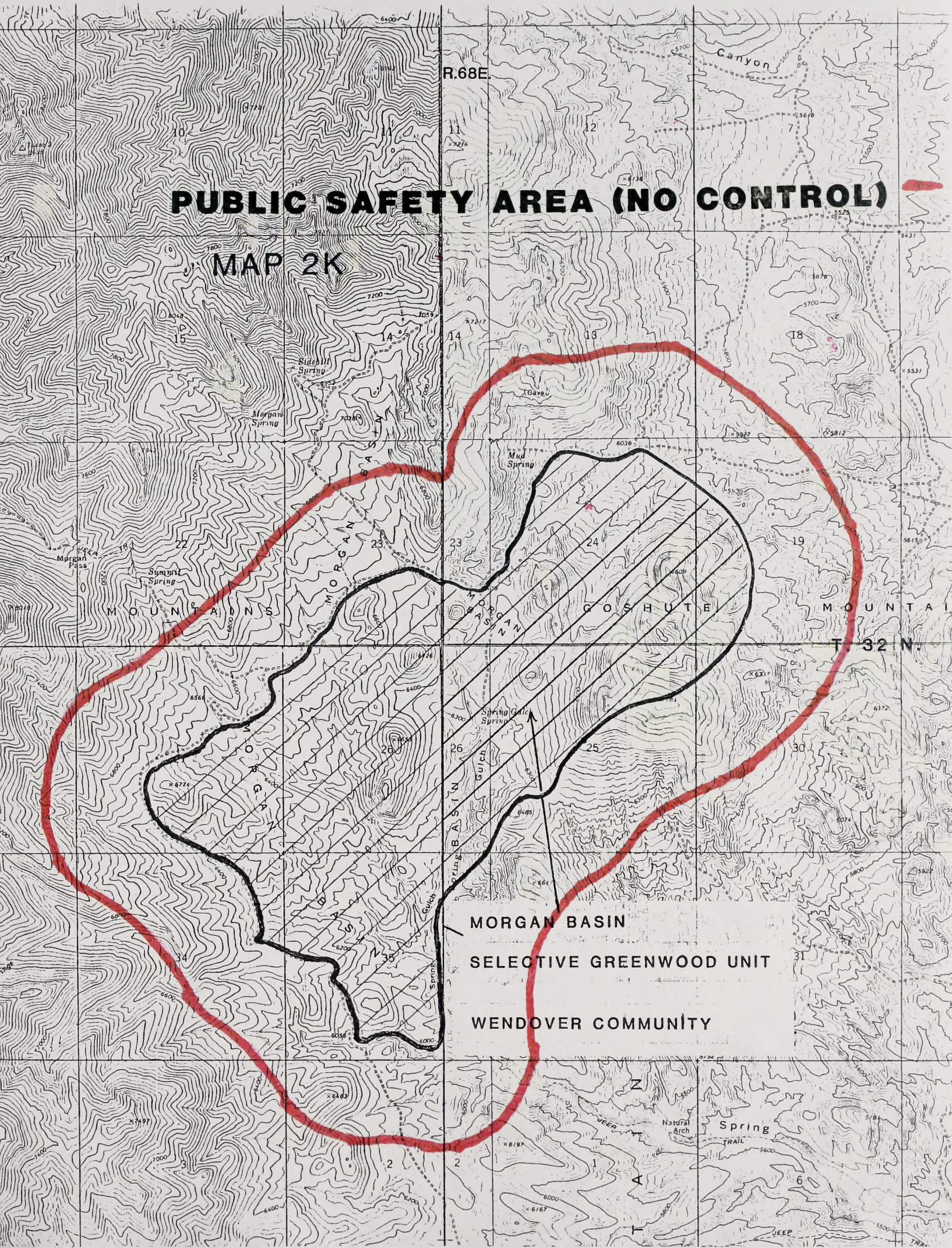
SELECTIVE GREENWOOD HARVEST

PUBLIC SAFETY AREA (NO CONTROL)

MAP 2J

PUBLIC SAFETY AREA (NO CONTROL)

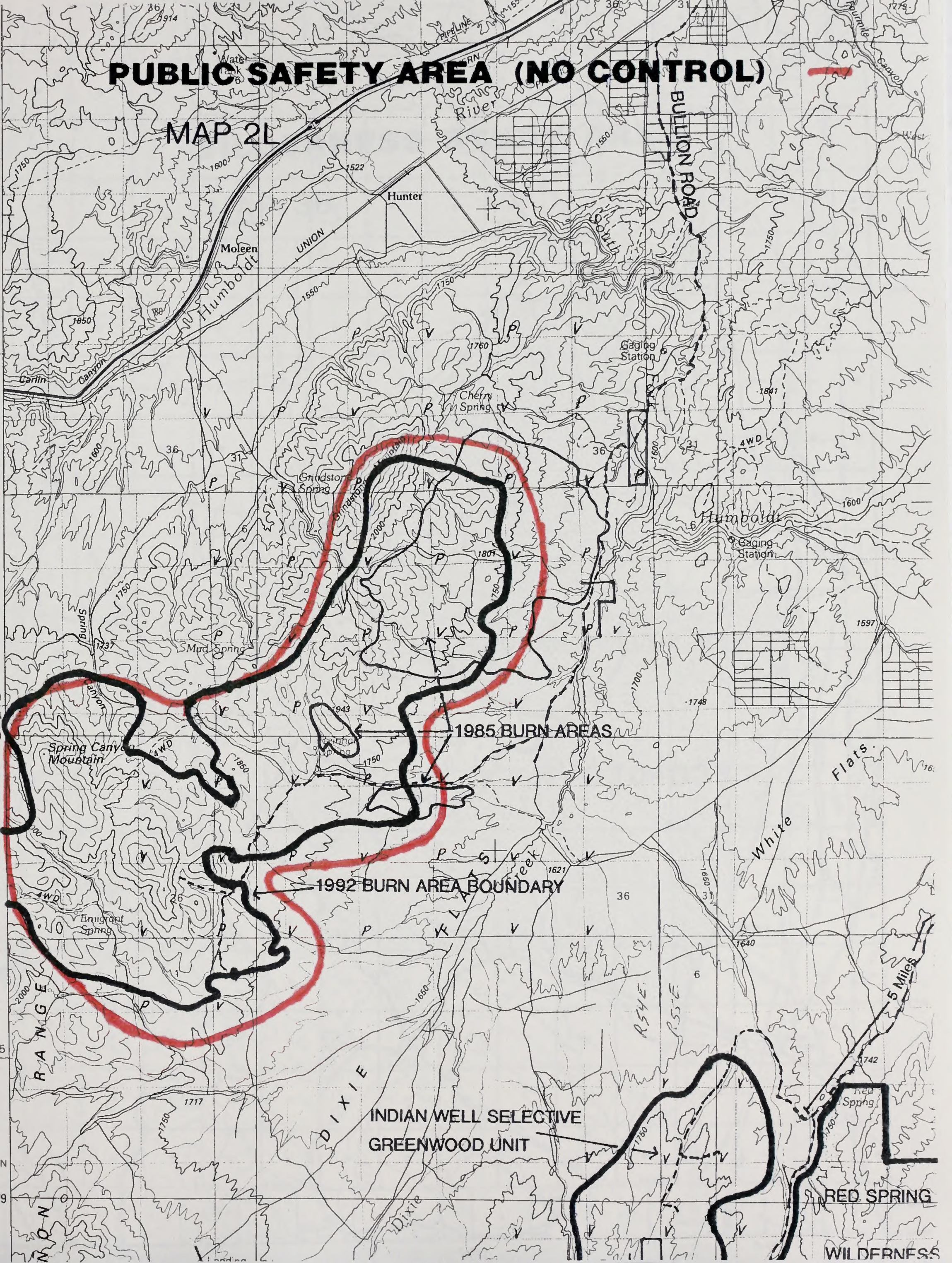
MAP 2K

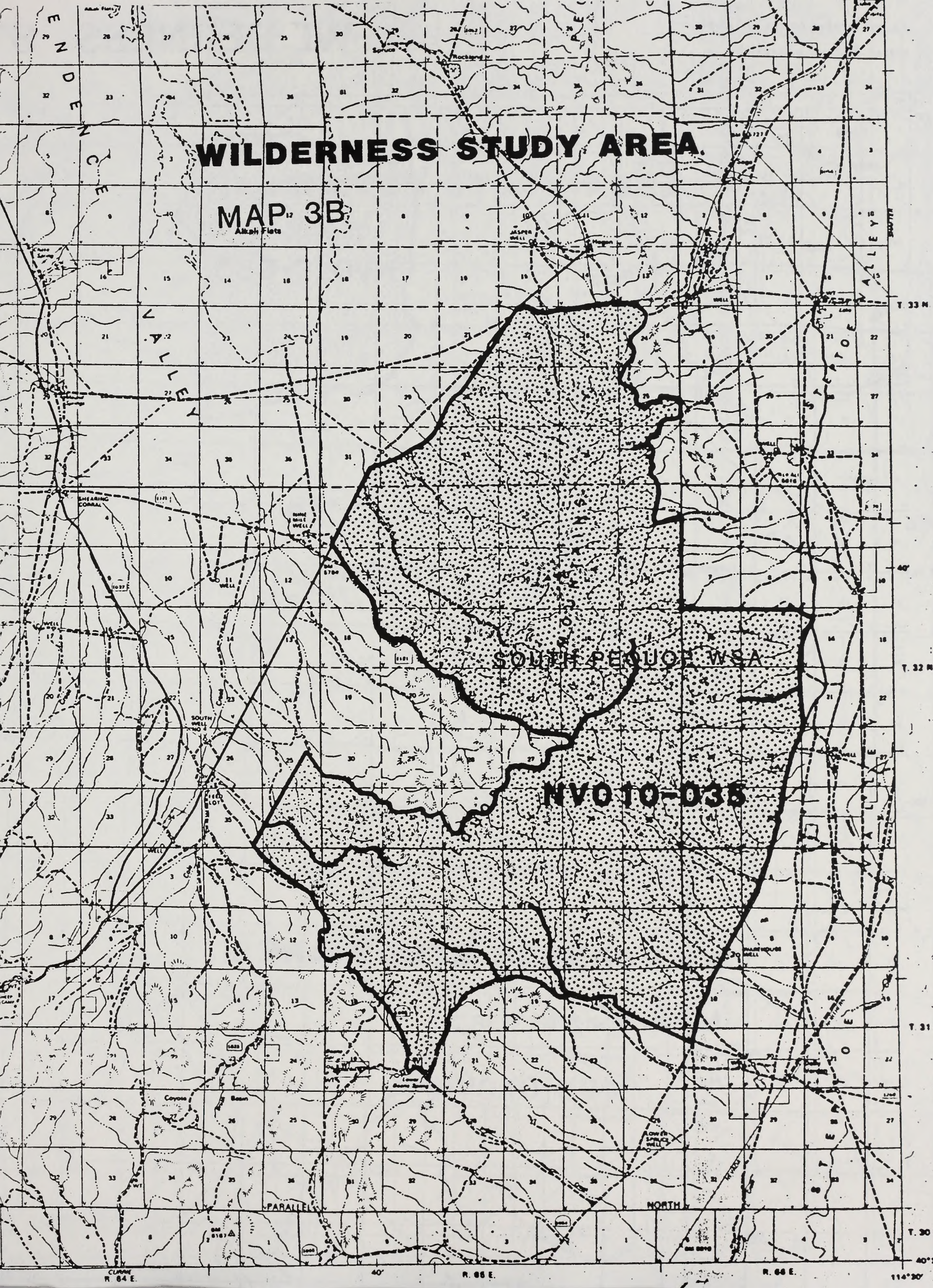


MORGAN BASIN

SELECTIVE GREENWOOD UNIT

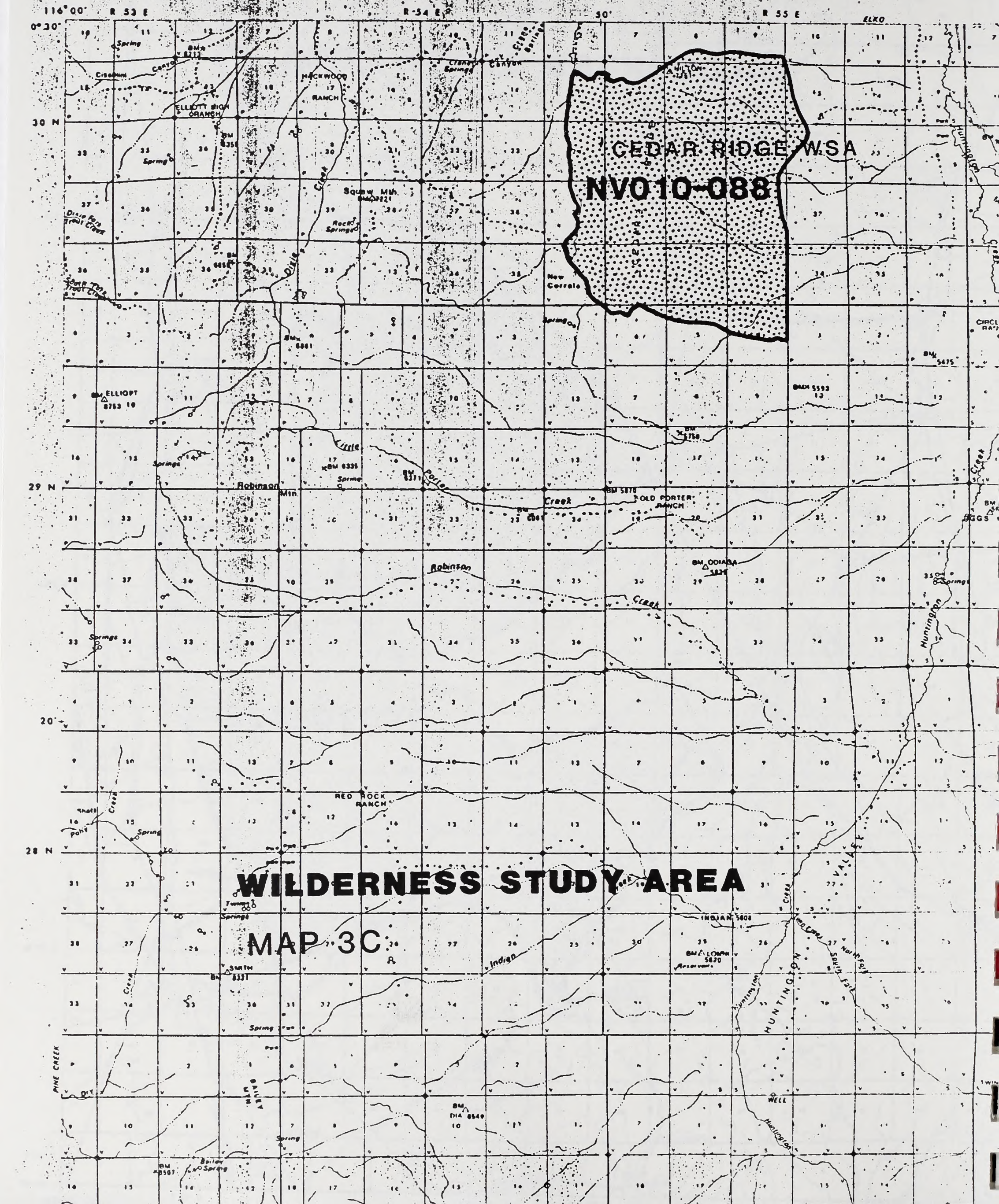
WENDOVER COMMUNITY

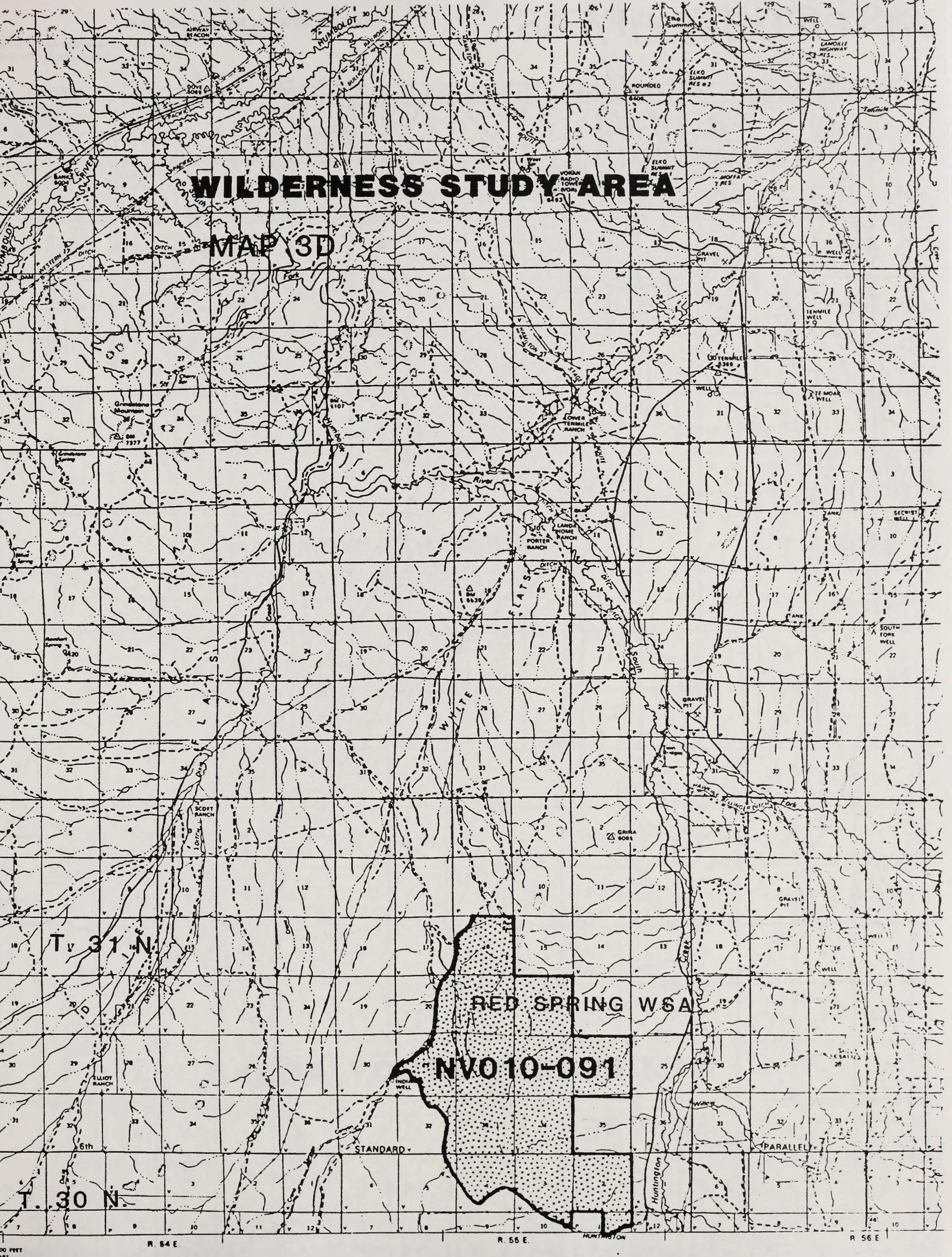

MAP 2L
PUBLIC SAFETY AREA (NO CONTROL)
1985 BURN AREAS
1992 BURN AREA BOUNDARY
INDIAN WELL SELECTIVE
GREENWOOD UNIT
RED SPRING
WILDERNESS
BULLION ROAD
Humboldt River
South Fork
Humboldt
Hunter
Moleen
UNION
PIPELINE
Carlin Canyon
Gaging Station
Cherry Spring
Grindstone Spring
Grindstone Mountain
Mud Spring
Spring Canyon
Spring Canyon Mountain
Emigrant Spring
Red Spring
White Flats
Dixie Creek
Dixie Flats
RANGE
5 Miles
4WD
R54E
R55E
1522
1550
1600
1621
1640
1650
1717
1742
1748
1750
1760
1801
1841
1850
1943
2000


WILDERNESS STUDY AREA
MAP 3B
SOUTH PEQUOP WSA
NV010-035
INDEPENDENCE VALLEY
STEPTOE VALLEY
Alkali Flats
Spruce
Rockland
SHEARING CORRAL
Coyote Basin
LOWER SPRING WELL
PARALLEL
NORTH
T. 33 N.
T. 32 N.
T. 31 N.
T. 30 N.
R. 64 E.
R. 65 E.
R. 66 E.
40°
40°20'
114°30'

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WILDERNESS ST

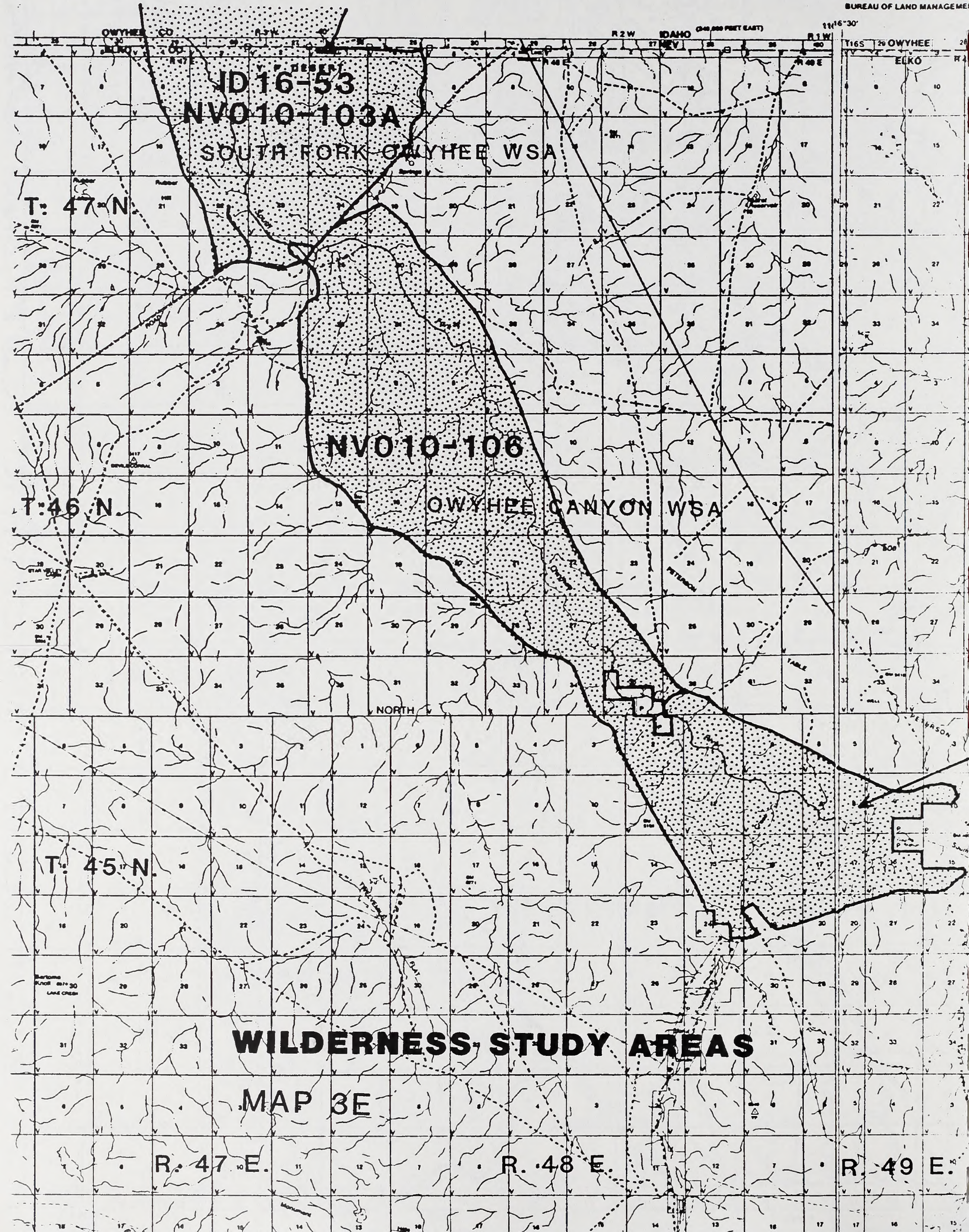




WILDERNESS STUDY AREA

MAP 3D

ESS STUDY AREAS

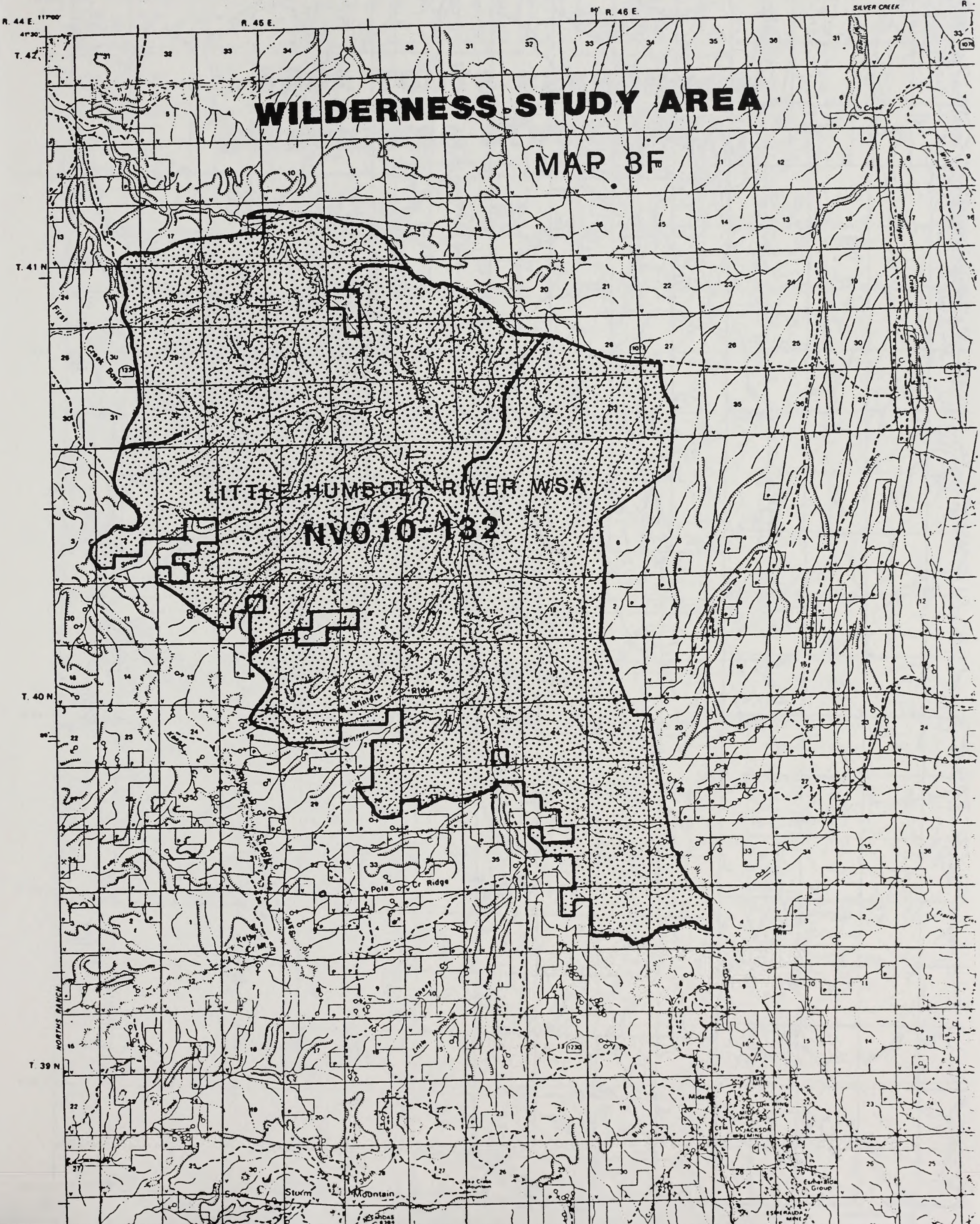


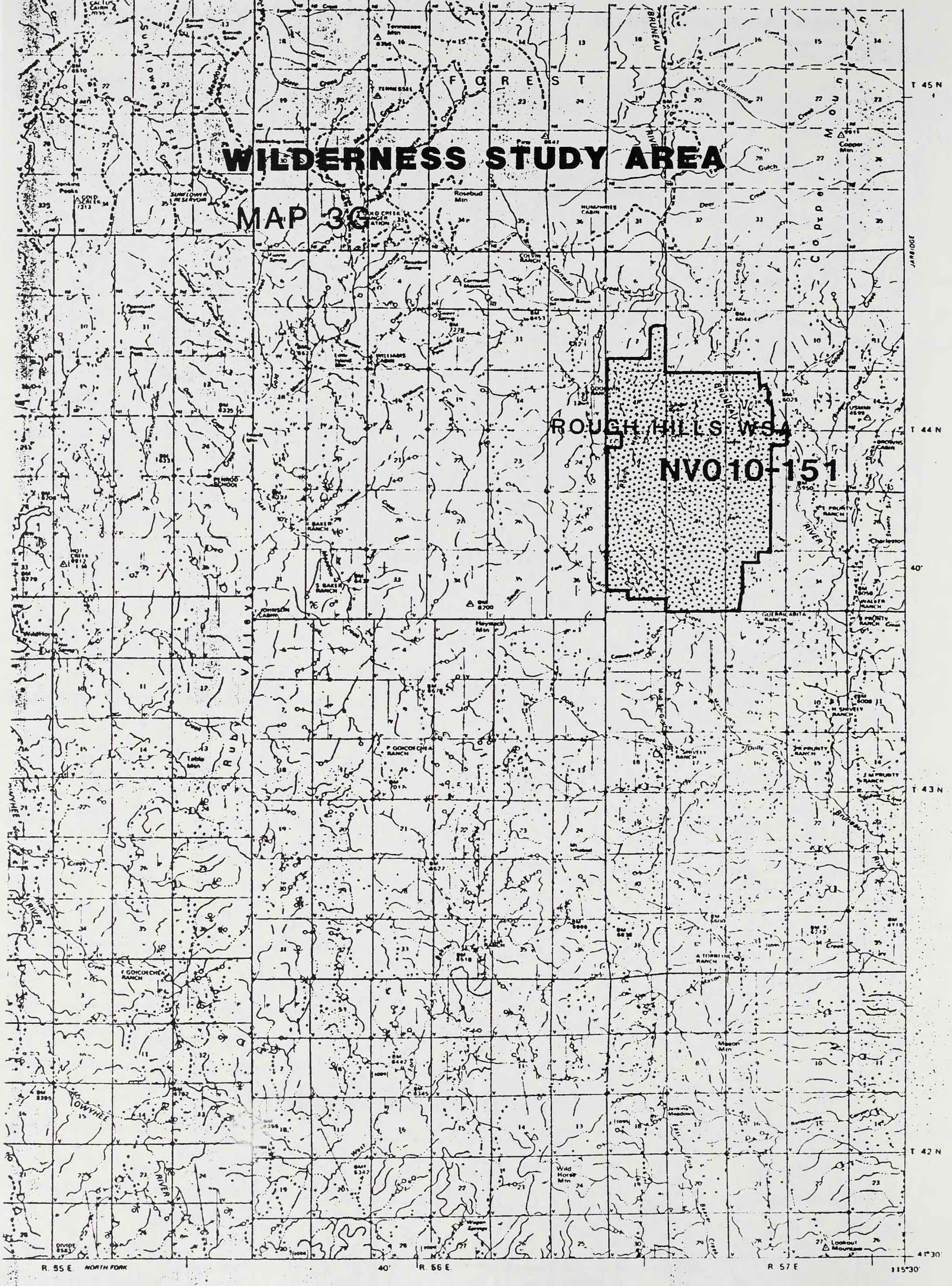
WILDERNESS STUDY AREAS

MAP 3E

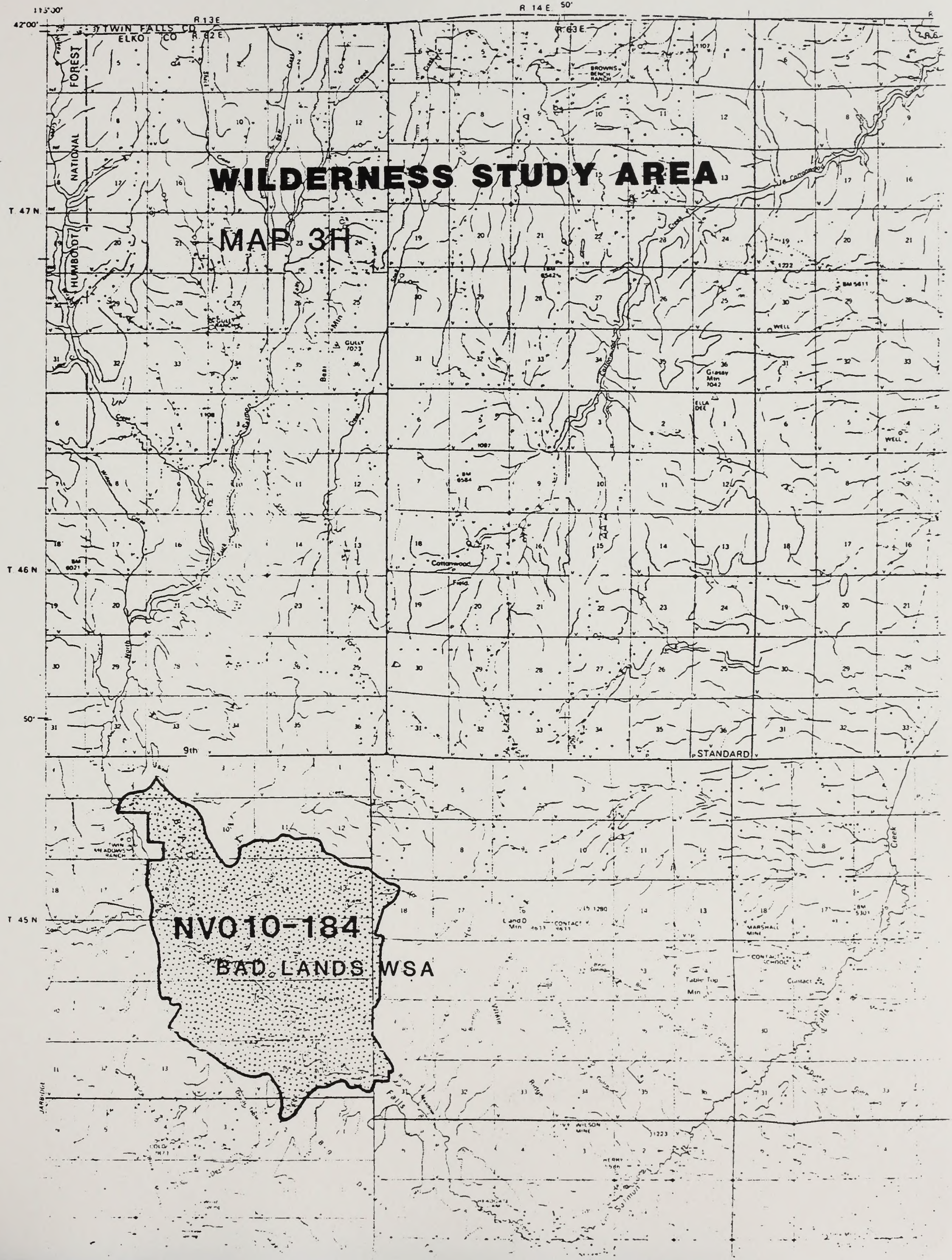
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WILDERNESS ST




WILDERNESS STUDY AREA
MAP 3G
ROUGH HILLS WSA
NV010-151
FOREST
Tennessee Mtn
Rosebud Mtn
Copper Mtn
Copper Mountains
BRUNEAU RIVER
Cottonwood
Gulch
Deer Creek
HUMPHRIES CABIN
COLLIN RANCH
Cornwall Creek
GOODWIN RANCH
WILLIAMS CABIN
BAKER RANCH
JOHNSON CABIN
Haystack Mtn
SUNFLOWER RESERVOIR
Jenkins Peaks
Charleston
P. PRUNTY RANCH
GUERRACABITIA RANCH
H. SNIVELY RANCH
SNIVELY RANCH
J.M. PRUNTY RANCH
P. GOICOECHEA RANCH
F. GOICOECHEA RANCH
A. TORRELLE RANCH
Table Mtn
Ruby Valley
Meadow Creek
Dolly Creek
Mason Mtn
Wild Horse Mtn
Lookout Mountain
Jenkins Meadows
Wagon Springs
DIVIDE
OWYHEE RIVER
JARBIDGE
T 45 N
T 44 N
T 43 N
T 42 N
40'
41°30'
115°30'
R. 55 E.
NORTH FORK
R. 56 E.
R. 57 E.

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT



ATTACHMENT 2

NATIONAL MEMORANDUM OF UNDERSTANDING

BETWEEN

BUREAU OF LAND MANAGEMENT

AND

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

National
Memorandum of Understanding Between the

BLM and the APHIS

12-34MU7-009 WO-229

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
AND THE
UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
FOR
ANIMAL DAMAGE CONTROL

1.0 INTRODUCTION

The Animal Damage Control (ADC) program was transferred from the Fish and Wildlife Service, U.S. Department of the Interior, to the Animal and Plant Health Inspection Service (APHIS), U.S. Department of Agriculture, by Public Law 99-190 on December 19, 1986. With this change in program administration, it is necessary to develop a mutual understanding between the Bureau of Land Management (BLM) and APHIS concerning the operational principles of animal damage control on BLM-administered lands.

2.0 PURPOSE

The purpose of the Memorandum of Understanding is (1) to identify the responsibilities of the respective agencies in discharging the Federal obligation, under the Animal Damage Control Act of March 2, 1931 (46 Stat. 1468; 7 U.S.C. 426-426b), as amended, for the management of wild vertebrates causing damage on lands administered by BLM; and (2) to establish general guidelines for field offices in order to assure a uniform approach and interpretation by field personnel in carrying out each agency's responsibilities.

3.0 AUTHORITIES

This agreement is made under the authorities of the Economy Act of June 20, 1932 (31 U.S.C. 686, 686b); Federal Land Policy and Management Act of October 21, 1976 (43 U.S.C. 1701-1782); and the Animal Damage Control Act of March 2, 1931 (46 Stat. 1468; 7 U.S.C. 426-426b, as amended).

In relation to control:

The Federal Land Policy and Management Act of October 21, 1976 (43 U.S.C. 1701-1782) generally states that:

> ". . . the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values, that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use."

Section 1 of the Animal Damage Control Act states:

> ". . . The Secretary of Agriculture is hereby authorized and directed to conduct such investigations, experiments, and tests as he may deem necessary in order to determine, demonstrate, and promulgate the best methods of eradication, suppression, or bringing under control on national forests and other areas of the public domain as well as on State, Territory, or privately owned lands of mountain lions, wolves, coyotes, bobcats, prairie dogs, gophers, ground squirrels, jack rabbits, and other animals injurious to agriculture, horticulture, forestry, animal husbandry, wild game animals, fur-bearing animals and birds, and for the protection of stock and other domestic animals through the suppression of rabies and tularemia in predatory or other wild animals; and to conduct campaigns for the destruction or control of such animals: Provided, That in carrying out the provisions of this Act the Secretary of Agriculture may cooperate with States, individuals and public and private agencies, organizations, and institutions."

4.0 OBJECTIVES

The BLM and APHIS recognize that native animals are resources of value and interest to the people of the United States. The ADC is an integral part of wildlife management and may be required to minimize depredations to livestock and wildlife species; protect endangered or threatened species; maintain viable populations of native wildlife species; preserve ecologically unique areas; minimize rodent and other wildlife damage to forestland, grassland, or cropland; and suppress animal-borne diseases.

It is also recognized that:

A. BLM is responsible for the management of lands under its jurisdiction, including the identification of how these lands are to be used and the establishment or authorization of such management measures as may be necessary to accomplish land and resource management objectives. This includes a determination as to whether ADC practices are compatible with other multiple-use objectives.

B. APHIS is responsible, under the Animal Damage Control Act of March 2, 1931, as amended, for evaluating and determining ADC control techniques to be employed and for conducting forest and range animal damage research.

C. All programs for controlling resident wildlife on BLM lands will be developed and conducted in coordination with the appropriate State agency(ies).

5.0 STATEMENT OF AGREEMENT

A. BLM and APHIS Mutually Agree:

1. To develop and conduct programs for controlling resident wildlife on BLM lands in coordination with the appropriate State management agency(ies).

2. To coordinate control program activities with representatives of other Federal and State agencies, private landowners and other interests that would be affected by the program.

3. To develop Interagency Guidelines at the the State level between BLM State Offices, APHIS State Directors and other Federal and State management agencies, as appropriate, where such guidelines are needed.

4. To operate the ADC program within the framework of a BLM District or BLM State Office plan to be jointly developed and to review this plan annually.

5. To mutually ensure an expeditious response to livestock damage problems, in part, by requiring livestock operators to submit requests for predator control services directly to APHIS who will then confer with BLM on this request and verify the need for control action.

6. To direct predator damage control toward individual predators or local populations where losses due to predators have been verified or are likely to occur.

7. To evaluate annually the effectiveness of, and the need for, animal damage control programs and to improve, where practical, programs conducted to meet the objectives of this Memorandum of Understanding.

8. To ensure that ADC projects initiated under this Memorandum of Understanding will conform to APHIS and BLM policies. Each agency will be responsible for preparing, submitting, and acquiring any required approvals.

9. To ensure that all questions arising in the field pertaining to the cooperative work of the two agencies be discussed by the local representative of APHIS and BLM, and that areas of disagreement will be referred to the next higher level for resolution.

10. To consult with the Fish and Wildlife Service as required under Section 7, Endangered Species Act. For areawide animal damage control projects for which APHIS has the lead, APHIS will conduct the consultation. If BLM initiates an animal damage project only for BLM resource management objectives, BLM will consult as required by section 7.

11. APHIS will develop a programmatic environmental impact statement in accordance with the National Environmental Policy Act (NEPA) and meeting the Council of Environmental Quality's regulations (40 CFR 1500-1508) which could be adopted by the BLM for Environmental Assessment (EA) purposes.

B. Specific agency responsibilities include:

1. The BLM Agrees to:

a. Determine whether ADC will be authorized on the public lands under its stewardship.

b. Participate in the evaluation of the need for ADC (including rodent damage control) programs for the protection of BLM and/or private resources.

c. Identify and delineate human safety zones and other areas where, for multiple-use reasons, ADC tools will be restricted or not allowed.

d. Prepare EA's for region-wide or site-specific activities, as applicable, with APHIS recommendations and input. These EA's will be tiered to the APHIS ADC environmental impact statement.

2. APHIS Agrees to:

a. Take the lead in preparation of an annual ADC plan for each BLM District. Such plans will be coordinated with the appropriate State management agency(ies) and approved by the BLM District Manager and APHIS State Director.

b. Review and evaluate requests for control and conduct control work as provided for in the ADC plan pertaining to public lands.

c. Ensure that ADC activities are compatible with existing appropriate laws and regulations.

d. Be responsible for overall coordination and management of the ADC program, including arrangement of interagency meetings whenever needed.

e. On an annual basis, provide a report to the BLM of animal control activities on public lands.

f. Provide the BLM with state-of-the-art information on animal damage control.

g. Upon request of the BLM, develop and carry out surveys necessary for the monitoring of population levels and distribution of selected large carnivores, other vertebrate pest species for which inventory techniques are available or might be developed, and for which there is a need for such information for management. Any such surveys would be coordinated with the appropriate State management agency(ies).

6.0 EFFECTIVE DATE/MODIFICATION AND DURATION

This MOU will become effective upon the date subscribed by the last signatory, and shall continue in force until terminated by either agency upon 90 days written notice to the other.

Amendments to this MOU may be proposed by either agency at any time and shall become effective upon approval by the other agency, unless otherwise stated.

National

Memorandum of Understanding Between the

BLM and the APHIS

Both parties agree that this MOU shall serve as a guide for development of State-specific Interagency Guidelines, which shall address in more detail those management matters specific to each State.

This MOU is intended to define the general terms under which concerned parties will cooperate and does not constitute a financial obligation.

The responsibilities assumed by cooperating parties are contingent upon availability of funds appropriated for this purpose by Congress.

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management

By Robt F Burford
Date AUG 17 1987
Title Director

UNITED STATES DEPARTMENT OF AGRICULTURE
Animal and Plant Health Inspection Service

By Bert W Hawkins
Date 9/16/87
Title Administrator

ATTACHMENT 3

NEVADA MEMORANDUM OF UNDERSTANDING

BETWEEN

BUREAU OF LAND MANAGEMENT

AND

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
AND THE
UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
FOR
ANIMAL DAMAGE CONTROL
IN THE
STATE OF NEVADA
September 28, 1990

THIS MEMORANDUM TIERS OFF THE NATIONAL LEVEL MEMORANDUM OF UNDERSTANDING DATED SEPTEMBER 16, 1987, BETWEEN THE BUREAU OF LAND MANAGEMENT, WASHINGTON, D.C., AND THE ANIMAL AND PLANT HEALTH INSPECTION SERVICE, WASHINGTON, D.C.

ATTACHMENT 3

TABLE OF CONTENTS

PAGE

Article 1 Authorities..............................2

Article 2 Introduction and Purpose....................2

Article 3 Federal Policies, Guidelines and Nevada Department of Wildlife Regulations...........3

Article 4 General Policies for Program Direction.......3

Article 5 Agreement of Mutual Responsibility..........4

Article 6 APHIS-ADC Agrees To.........................5

Article 7 BLM Agrees To...............................6

Article 8 Standard Program Procedures.................7

Article 9 Amendment to the MOU and District ADC Plan...................................7

Article 10 Emergency Animal Damage Control.............8

Article 11 Effective Date/Modification and Duration.....9

Article 12 Approval...................................9

Signature Page.............................10

ATTACHMENT 3

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
BUREAU OF LAND MANAGEMENT, NEVADA
UNITED STATES DEPARTMENT OF THE INTERIOR
AND THE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE, NEVADA
UNITED STATES DEPARTMENT OF AGRICULTURE

THIS IS A MEMORANDUM CONSISTENT WITH THE NATIONAL LEVEL MEMORANDUM OF UNDERSTANDING DATED SEPTEMBER 16, 1987, BETWEEN THE BUREAU OF LAND MANAGEMENT, WASHINGTON, D.C., AND THE ANIMAL AND PLANT HEALTH INSPECTION SERVICE, WASHINGTON, D.C., FOR PLANNING AND PROGRAM COORDINATION.

ARTICLE 1

AUTHORITIES

This Memorandum of Understanding (MOU) has been developed under authorities of; Federal Land Policy and Management Act of October 21, 1976 (43 U.S.C. 1701-1782); the Animal Damage Control Act of March 2, 1931 (46 Stat. 1486; 7 U.S.C. 426-426B) as amended and the Economy Act of June 20, 1932 (31 U.S.C. 686, 686b.) The MOU will implement the respective federal agency obligations for management of wild vertebrates causing damage on lands identified in the National Memorandum of Understanding between the two agencies dated September 16, 1987.

ARTICLE 2

INTRODUCTION AND PURPOSE

The purposes of this MOU are to: (1) develop a mutual understanding between BLM and the Animal Plant Health Inspection Services - Animal Damage Control (APHIS-ADC), concerning the operational principles of animal damage control on BLM administered lands; (2) establish and maintain a cooperative working relationship between the above named parties to identify and further their common interest and responsibilities to prevent or minimize damage caused by wild animal species, primarily predator and rodent species causing economic damage, including damage and loss caused by threatened and endangered species, to agriculture, livestock, forestry, wildlife and human health and safety or other resources of value on BLM lands; (3) implement procedures and provide policy guidance for BLM and APHIS-ADC district personnel to assure a uniform approach and interpretation of the intent in carrying out each agency's responsibilities; and (4) facilitate exchange of information to help provide credible solutions to existing and future ADC technological demands and issues.

ARTICLE 3

FEDERAL POLICIES, GUIDELINES AND NEVADA DEPARTMENT OF WILDLIFE (NDOW) REGULATIONS

Federal policies applicable to this MOU are those delineated in the BLM Policy and Manual Guidelines on Animal Damage Control, the National Memorandum of Understanding between BLM and APHIS-ADC, and the APHIS-ADC Manual. Nevada Department of Wildlife, Classification of Wildlife Statutes 501.110 also applies.

Vertebrate animals to be considered by the provision of this MOU are classified in Nevada NRS Statutes 501.110 as, a) wild animals (mammals) which must be further classified as either game animals, fur bearing animals, protected or unprotected animals, and b) wild birds, which must be further classified as either game birds, protected birds or unprotected birds.

Vertebrate animals listed above that are protected by federal law and/or Nevada NRS Title 45, will be included in animal damage control plans only after consultation and agreement with the appropriate wildlife authority.

ARTICLE 4

GENERAL POLICIES FOR PROGRAM DIRECTION

The BLM and APHIS-ADC recognize that wild animals are resources of value and interest to the people of the United States. However, at times, wild animals can cause significant economic loss and damage resulting in conflicts with land use management objectives.

For the purpose of this agreement, animal damage control is considered a resource management tool and may be required to prevent or minimize depredations to livestock and wildlife species; protect endangered or threatened species; maintain viable populations of wildlife species; preserve ecologically unique areas; minimize rodent damage to forest and range resources; suppress animal-borne, communicable diseases which can be hazardous to human health and domestic livestock.

Animal damage control methods and programs will be planned and conducted in a responsible manner. Established guidelines and policy directives will be followed with APHIS-ADC informing the public and taking precautions to protect public health and safety, and minimize adverse impacts to threatened or endangered wildlife and non-target animal species.

Proposed damage control activities will be directed toward individual predators or local populations where historical or ongoing losses due to predators have been verified or are likely to occur. Local populations may include several animals within a broad home range where predator damage is occurring.

When potential danger exists to public health and safety or domestic animals by wild animals carrying and spreading communicable diseases, programs for reducing the population density of predatory or rodent species may be developed to reduce the continued transmission of the disease.

Federally registered chemical toxicants may be used to control predators or rodents when an evaluation determines that such use is safe, appropriate, and legal. Evaluations will also include social, economic, and biological considerations. The M-44 device may be authorized for use on the public lands subject to label directions, including use restriction established by the U.S. Environmental Protection Agency (EPA), and Section .06H of the BLM Manual 6830 (08/04/88) on Animal Damage Control.

All programs for controlling resident wildlife on BLM administered surface public lands will be developed and conducted in coordination with the appropriate state agencies, and U.S. Fish and Wildlife Service (USFWS) when threatened or endangered animals species are involved. Control measures will be conducted in accordance with federal, state, and local laws and interagency procedures.

In designated wilderness and wilderness study areas, only the minimum amount of control necessary will be authorized to ensure protection of wilderness wildlife and resource values. M-44's will not be allowed in wilderness areas.

In areas where ADC is conducted on a regular and intensive basis, effects of control on target and non-target species will be monitored.

ARTICLE 5

AGREEMENT OF MUTUAL RESPONSIBILITY

Because of the complex nature of ADC and public land management responsibilities, specific working relationships, when mutually developed, constitute an organized, responsive approach to ADC needs and streamline processing requirements.

Therefore, it is recognized and mutually agreed that:

BLM is responsible for the management of lands under its jurisdiction, including the identification of how these lands are to be used and the establishment or authorization of such measures as may be necessary to accomplish land and resource management objectives. This includes a determination as to whether ADC practices are compatible with other multiple-use objectives.

The USDA Animal and Plant Health Inspection Service, Animal Damage Control Program is recognized as the federal service agency qualified and available to conduct animal damage control on public lands. APHIS-ADC is responsible, under the Animal Damage Control Act of March 2, 1931 as amended, for evaluating and determining ADC proposed techniques to be employed.

Control program activities will be coordinated with representatives of other federal and state agencies, private landowners, and other parties that may be affected by control programs.

The ADC program will be operated within the framework of a BLM District Animal Damage Control Plan to be jointly developed. This plan will be reviewed at the district level and updated annually.

To insure resolution of any questions that may arise at local field offices involving interpretation of the cooperative effort of the two agencies, the local representatives of APHIS-ADC and BLM will forward any unresolved disagreement to the next higher level of authority for resolution.

5.1 PREDATOR CONTROL REQUESTS

To mutually ensure an expeditious response to predator damage requests, livestock operators will submit requests for predator control services directly to APHIS-ADC who will then coordinate these requests with BLM in accordance with provisions of the respective district plans.

5.2 RODENT CONTROL REQUESTS

Rodent control requests will be initiated by the District BLM office. These requests will be based on a determination that rodents are causing significant detrimental impacts on public land resources, or adjacent property, or earth work structures, or where a human health hazard exists.

ARTICLE 6

APHIS-ADC AGREES TO:

1. Take the lead in preparation of an annual ADC plan for each BLM district.

2. Initiate the annual review which will consist of preparing the narrative and the control maps to determine what actions may be necessary. Planning for the annual review of the ADC Plan will be coordinated with Resource Management Agency(s) and proposed plans shall be approved by the BLM District Manager and the APHIS-ADC District Supervisors. The NDOW will be a signature party to the plan at the regional level.

3. Evaluate individual requests for control and conduct control work as provided for in the respective district plans.

4. Provide overall program development and coordination with other agencies, as may be required, including the U.S. Fish and Wildlife Service, the Nevada Game and Fish Department, the State Agriculture Department, the State Health Department or other appropriate authority.

5. Provide a report to BLM on an annual basis which covers animal damage control activities conducted within the State of Nevada.

6. Conduct Section 7 consultation on the proposed annual predator control plan when threatened and endangered animal species may be affected through the application of a predator control method.

7. Assumes responsibility for all claims that arise as a result of injury to the public or loss of private property that occurs from ADC efforts.

ARTICLE 7

BLM AGREES TO:

1. Determine whether ADC will be authorized on the BLM administered surface public lands under its stewardship.

2. Participate in the evaluation of the need for ADC (including rodent damage control) programs for the protection of BLM and/or adjacent private resources.

3. Identify and delineate human safety zones and other areas where, for multiple-use reasons, ADC tools and methods will be restricted or not allowed.

4. To conduct Section 7 consultations on proposed rodent control plans when threatened or endangered animal species may be affected through the application of a rodent control method or material.

5. Be responsible for the preparation of environmental assessments for the annual ADC plan, which will include anticipated impacts to any candidate species, effects of control on target and non-target species, and alternatives to the proposed control plan. Provisions for emergency control will also be analyzed.

ARTICLE 8

STANDARD PROGRAM PROCEDURES

1. Requests for predator control services by ranchers and other private individuals will be submitted directly to APHIS-ADC. These requests, together with existing loss reports, will be consolidated by APHIS-ADC on maps and in narrative statement to illustrate allotments where control is recommended and submitted with a narrative describing the proposed control program, including ADC tools to be employed, to the BLM District Manager before October 15 of each year.

2. BLM initiated requests for predator and rodent damage control programs will also be identified.

3. The BLM District Manager will:

   (a) Review the map(s) narratives, and proposed programs.
   (b) Delineate on the map(s) planned control, restricted control no control, and safety areas.
   (c) Host a meeting for involved agencies to review the information, the proposed plan and the Section 7 consultation schedule. This may involve U.S. Forest Service representatives from adjoining areas.

4. BLM and APHIS-ADC will jointly finalize the ADC plan and map(s). Environmental assessments, and any required pesticide approvals will be handled by BLM as part of this plan completion process. The Section 7 consultation determinations will be incorporated into the final plan.

5. Upon mutual agreement of APHIS, BLM, and NDOW the plan will be approved, distributed, and filed as appropriate, before January 1 of each year.

6. APHIS-ADC will provide a summary of results including predators taken and methods used back to the authorized BLM official before October 15 of each year, for the preceeding seasons efforts.

7. Animal Damage Control will not be authorized after January 1 of each year without an approved annual ADC Plan.

ARTICLE 9

AMENDMENT TO THE MOU AND DISTRICT ADC PLAN

Amendment of the MOU may be accomplished through mutual agreement between the BLM State Director and the APHIS-ADC State Director.

District ADC plans may be amended during the program year through mutual agreement between the BLM District Manager and the APHIS-ADC District Supervisors, consistent with the terms of this MOU and the Bureau 6830 Manual.

ARTICLE 10

EMERGENCY ANIMAL DAMAGE CONTROL

Situations may develop which warrant ADC activities in designated no-control areas. These needs will be handled on a case-by-case basis using the following procedures:

1. Requesting Control:

   Individuals requesting emergency control for rodents in case of disease or predator control will submit loss information or disease prognosis to the local representative of APHIS-ADC.

2. Problem Evaluation:

   APHIS-ADC will evaluate the loss information and the health hazard potential in rodent or predator populations and determine if emergency control measures are warranted. If immediate action is warranted and the control area does not involve established safety zones, wilderness or wilderness study areas, the ADC agency conducts necessary control operations using permitted methods and notifies the Bureau as soon as possible. If time is not of the essence then the procedures described below must be used.

3. Submissions to BLM District Manager.

   For each animal damage complaint for which emergency control measures are proposed, the APHIS must provide the District Manager:

   a. A project report request form verifying that the affected operator has submitted a claim for that particular problem, and that a predator-caused livestock kill problem has recently occurred.

   b. A brief written explanation of where control measures are proposed, the methods to be used, and how long activities will continue.

4. The District Manager will evaluate the control request, based on the information provided, decide whether to approve control operations, and notify the appropriate APHIS official.

ARTICLE 11

EFFECTIVE DATE/MODIFICATION AND DURATION

This MOU shall become effective upon the date of final signature by the parties representing the respective agencies, and shall continue indefinitely. The MOU may be terminated by either party upon 30 days written notice to the other party.

This MOU is intended to define the general terms under which participants will cooperate and does not constitute a financial obligation.

The responsibilities assumed by the cooperating parties are contingent upon the availability of funds appropriated for the purposes described herein by the Congress of the United States.

ARTICLE 12

APPROVAL

The State Director of the APHIS-ADC and the State Director of the BLM are empowered to enter into this Memorandum of Understanding.

The undersigned do hereby agree to apply the principles and terms of this agreement in full force and effect as an integral part of their respective management programs.

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management

By Fred Wolf
State Director, Nevada

Date: 9/28/90

UNITED STATES DEPARTMENT OF AGRICULTURE
Animal and Plant Health Inspection Service
Animal Damage Control

by Gary Simmons
State Director, Nevada

Date: 9-28-90

ATTACHMENT 4

NEVADA DIVSION OF WILDLIFE

1994-95

FURBEARING MAMMALS AND MOUNTAIN LION

SEASONS AND REGULATIONS

1994–95 FURBEARING MAMMALS AND MOUNTAIN LION SEASONS AND SPECIAL REGULATIONS

MOUNTAIN LION

Mountain Lion Resident Hunt No. 5132

Mountain Lion Nonresident Hunt No. 5232

Limit: One.

Sex/Age Class: Either sex. NOTE: Spotted kittens, and females with spotted kittens, prohibited. See NAC 502.370.

Hunting Hours: Anytime of the day or night.

Season Dates: October 1, 1994 through April 30, 1995 for all unit groups, except areas 24, 25, 26 and 27; October 1, 1994 through May 20, 1995 for areas 24, 25, 26 and 27, except as provided in sections 5 and 6 of this regulation.

Tag Quota: Unlimited.

Harvest Quota: The harvest quota is the allowable harvest for each listed management area or unit(s). When the harvest quota has been filled in any management area or unit(s), that area or unit(s) will be closed to hunting. Depredation harvest will not affect sport harvest objectives in areas 7, 8, 10, 11, 12, 13, 14, 15 and 29.

Areas	Mt. Lion Management Unit Groups	Harvest Objectives
1	Units 011–015	0
2	Units 021–022	3
3	Units 031, 032, 034, 035	5
3	Unit 033	0
4	Units 041–046	7
5	Unit 051	7
6	Units 061, 062, 064, 065, 067, 068	7
6	Unit 066	2
7/8	Units 071–079, 081	13
10	Units 102, 103, 104, 108	13
10	Units 101, 105, 106	10
11	Units 111, 112	10
11	Units 113, 114, 115	10
12	Unit 121	10
13	Units 131–134	8
14	Units 142, 143, 144, 145	10
14	Unit 141	2
15	Units 151, 152	2
15	Units 154, 155	5
16	Units 161–164	20
17	Units 171–173	15
18	Units 181–184	6
19	Units 192, 194–196	9
20	Units 201–206	13
21	Units 211, 212	9
22	Units 221–223	15
23	Unit 231	10
24	Units 241–244	8
25	Units 251–253	3
26	Units 261–268	7
27	Units 271–272	5
29	Unit 291	7
	Total	251

SPECIAL NOTE: The 1994–95 Nevada hunting license expires 2/28/95. If you plan to hunt after February 28 you must purchase a 1995–96 license.

SPECIAL REGULATIONS

1. There is no quota on the number of tags that will be issued for the mountain lion management areas or unit(s).
2. Tags will be available to residents and nonresidents by application only.
3. Hunters who are awarded tags for this mountain lion hunt must secure a **Hunting Permit** before they can hunt under the authority of this tag. A hunter may obtain a permit which could contain a maximum of two valid unit groups.
4. Hunting permits will be authorized by mail, telephone, or by appearing in person only at the following division offices:

For management areas 2, 3, 4, 5, 18, 19, 20 and 29:
Region I Office
380 W. "B" Street
Fallon, Nevada 89406
(702) 423-3171

For management areas 6, 7/8, 10, 11, 12, 13, 14 and 15:
Region II Office
1375 Mountain City Highway
Elko, Nevada 89801
(702) 738-5332

For management areas 16, 17, 21, 22, 23, 24, 25, 26 and 27:
Region III Office
4747 W. Vegas Drive
Las Vegas, Nevada 89108
(702) 486-5127

For all management areas:
Main Office
1100 Valley Road
Reno, Nevada 89512
(702) 688-1500

5. Hunting permits will be valid in the specified management area or unit(s) until the harvest objective for that management area or unit(s) is reached, or the general season closure whichever is first. Upon attainment of the harvest objective, the management area or unit(s) will be closed to mountain lion hunting.
6. Hunters holding a valid permit for a management area or unit(s) at the time that the harvest objective is filled will be notified by the division that the area or unit(s) is closed and that their permit is no longer valid. Hunters may then reapply for any other management area or unit(s) where the harvest objective has not been filled.
7. Division representatives in the Fallon, Elko and Las Vegas offices will retain final judgment on issuance of permits and distribution of hunters.
8. A hunting permit may be invalidated by the Division and reissued for another mountain lion management area or unit(s), provided the hunter has no more than one valid permit.

NAC 502.370 Mountain lion tags: Eligibility; harvesting; report of accidental trapping or killing.

1. Unless otherwise specified by regulation of the commission or Title 45 of NRS, any resident of Nevada, nonresident or alien is eligible to apply once for a mountain lion tag in any year.
2. A person who harvests a mountain lion shall, within 72 hours after harvesting it, personally present the skull and hide to a representative of the division of wildlife for inspection. The representative shall affix the seal of the division permanently to the hide.
3. It is unlawful for any person to:

(a) Transport a hide of a mountain lion from this state without a seal permanently affixed to the hide;

(b) Except as otherwise provided in subsection 2, possess the hide of a mountain lion without a seal permanently attached to it;

(c) Kill a female mountain lion which is accompanied by a spotted kitten; or

(d) Kill or possess a spotted mountain lion kitten.

4. If a mountain lion is accidentally trapped or killed, the person trapping or killing it shall report the trapping or killing within 48 hours to a representative of the division of wildlife. The mammal must be disposed of in accordance with the instructions of the representative.

NAC 504.701 Hunting mountain lions.

A master guide who is hired to guide a hunt for a mountain lion shall ensure that his client physically accompanies him or his subguide in the pursuit and killing of the mountain lion.

NAC 503.147 Hunting with a dog. It is unlawful to hunt, chase or pursue:

1. Any mountain lion with a dog except during the open season and under the authority of a hunting license, mountain lion tag and permit to hunt.
2. Any fur-bearing animal with a dog except during the open season and under the authority of a trapping license.
3. * * *

NEVADA

DIVISION OF WILDLIFE
P.O. Box 10678, Reno, Nevada 89520-0022

page1

ATTACHMENT 4

ATTACHMENT 4

BOBCAT SEAL REGULATIONS

NAC 502.347 Bobcat: Duties; prohibited acts; fee for seal.

1. Any person who kills a bobcat shall, within 10 days after the close of the season, personally:

(a) Present its pelt for inspection by and give its lower jaw to a representative of the division;

(b) Have the division's seal affixed to the pelt; and

(c) Complete a report of the killing in accordance with the division's instructions.

2. A person shall not sell, offer for sale, barter, trade, purchase or transport from the state any pelt of a bobcat unless the division has affixed its seal to the pelt.

3. A person shall not possess a raw pelt of a bobcat 10 days or more after the close of the season unless the division's seal is permanently attached to the pelt.

4. A resident of Nevada must pay the division $5 for such a seal.

PELT SEALING TIMES AND LOCATIONS

Pelt sealing will be done only during normal business hours (8:00 a.m.-5:00 p.m.) on the dates specified. Sealing locations will be at Division offices unless otherwise noted.

City	Pelt Sealing Dates
Elko	Jan. 10, Jan. 27 and Feb. 22, 1995.
Ely	Jan. 11 (Noon-5 p.m.), Feb. 3 (10 a.m.-5 p.m.), Feb. 4 (7 a.m.-5 p.m.) and Feb. 21 (8 a.m.-1 p.m.) 1995.
Eureka	Feb. 2 (Noon-5 p.m.) 1995.
Fallon	Jan. 13 (8 a.m.-4 p.m.), Jan. 14 (7 a.m.-Noon; Fallon Fur Sale) and Feb. 22 (9 a.m.-4 p.m.) 1995.
Las Vegas	Feb. 3 and Feb. 22, 1995.
Lovelock	Feb. 1 (Noon-4 p.m.) 1995.
Panaca	Jan. 12, Feb. 3 and Feb. 22, 1995.
Tonopah	Feb. 22, 1995.
Winnemucca	Feb. 1 (8 a.m.-1 p.m.), Feb. 22 (8 a.m.-4 p.m.) 1995.

CLOSED TO TRAPPING

1. All of the Charles Sheldon Antelope Refuge and Range.
2. See NAC 504.340 (other side).

WILDLIFE MANAGEMENT AREA REGULATIONS

NAC 504.170 Trapping on wildlife management areas: Permits.

Trapping on specific wildlife management areas is allowed only as follows:

1. Persons may trap on the Stillwater Wildlife Management Area, subject to any applicable federal regulations.

2. Persons having permits to do so may trap on the Overton, Key Pittman, Wayne E. Kirch, Railroad Valley, Humboldt, Fernley, Scripps, Mason Valley and Alkali Lake wildlife management areas. Permits will be issued through a drawing process and may contain designations of specific trapping areas, dates or other restrictions to ensure compatibility with other public activities.

3. Persons may trap on the Franklin Lake Wildlife Management Area.

NAC 504.135 Firearms: Limitation; use; exception.

1. Except as otherwise provided in subsection 5, the discharging of a rifle or pistol is prohibited on the following wildlife management areas:

(a) Overton in Clark County.
(b) Key Pittman in Lincoln County.
(c) Wayne E. Kirch in Nye County.
(d) Scripps in Washoe County.
(e) Mason Valley in Lyon County.
(f) Stillwater in Churchill County, in the main marsh area as posted by the Division of Wildlife, during the season for waterfowl.
(g) Franklin Lake in Elko County during the season for waterfowl.

2. * * *

3. The use of shotguns capable of holding more than three shells is prohibited on all wildlife management areas unless it is plugged with a one piece filler, incapable of removal without disassembling the gun so its total capacity does not exceed three shells.

4. The use or possession of shells for a shotgun containing shot larger than standard-sized T is prohibited on the following wildlife management areas:

(a) Overton in Clark County.
(b) Key Pittman in Lincoln County.
(c) Wayne E. Kirch in Nye County.
(d) Scripps in Washoe County.
(e) Mason Valley in Lyon County.

5. The provisions of subsection 1 do not apply to persons authorized by the Division of Wildlife to use rifles and pistols for the control of predatory animals and rodents.

TRAPPING REGULATIONS

UNLAWFUL TO HUNT FURBEARING MAMMALS OTHER THAN BY TRAP, GUN OR BOW AND ARROW

NRS 503.450

It shall be unlawful for any person at any time to hunt any furbearing mammal in any manner other than by trap, gun or bow and arrow.

TRAP REGISTRATION

NRS 503.452 Registration of traps, snares or similar devices with division; Fee.

Each trap, snare or similar device used in the taking of wild mammals must bear a number registered with the division or be permanently marked with the name and address of the owner or trapper using it. Registration of a trap is permanent. A registration fee of $5.00 for each registrant is payable only once, at the time the first trap, snare or similar device is registered.

VISITING TRAPS AND SNARES

NRS 503.570 Traps or snares not designed to cause immediate death to be visited once each 96 hours; removal of mammals.

1. A person taking or causing to be taken wild mammals by means of traps, snares or any other devices which do not, or are not designed to, cause immediate death to such mammals, shall, when the traps, snares or devices are placed or set for the purpose of taking mammals, visit or cause to be visited at least once each 96 hours each trap, snare or other device during all of the time the trap, snare or device is placed, set or used in the taking of wild mammals, and remove therefrom any mammals caught therein.

2. * * *

UNLAWFUL TO SET TRAP WITHIN 200 FEET OF PUBLIC ROAD OR HIGHWAY; EXCEPTION

NRS 503.580

1. For the purposes of this section, "public road or highway" means:

(a) Highways designated as United States highways.
(b) Highways designated as state highways pursuant to the provisions of NRS 408.285.
(c) A main or general county road as defined by NRS 403.170.

2. It is unlawful for any person, company or corporation to place or set any steel trap, used for the purpose of trapping mammals, larger than a No. 1 Newhouse trap, within 200 feet of any public road or highway within this state.

3. This section shall not be construed so as to prevent the placing or setting of any steel trap inside, along or near a fence which may be situated less than 200 feet from any public road or highway upon privately owned lands.

DISTANCE FROM EXPOSED BAIT

NAC 503.157 Steel leg hold traps; Distance from exposed bait.

1. A person shall not place, set or maintain a steel leg hold trap within 30 feet of exposed bait.

2. A person using bait is responsible if it becomes exposed for any reason.

3. A person shall not use any part of a game animal, game bird, game fish, game amphibian or protected species of wildlife for bait.

1994–95 FURBEARING MAMMALS AND MOUNTAIN LION FEES AND REGULATIONS

The Nevada State Board of Wildlife Commissioners under the authority of sections 501.181, 502.240, 502.250, and 503.150 of the Nevada Revised Statutes, does hereby adopt the following regulations for the management of the furbearing mammals and mountain lion resource:

HUNTING LICENSES, TAGS, AND FEES

(License Year—March 1, 1994 through February 28, 1995)

Resident Hunting Licenses; Fees:

	Class	*Fees*
General Hunting License (For persons 16 years of age or older)	20	$20.50
Junior Hunting License (For persons 12 through 15 years of age)	21	5.50
Senior Hunting License (For a person 65 years of age or older with 6 or more months of Nevada residence)	22	3.50
Serviceman's Hunting License (For a Nevada resident who is a serviceman on active duty outside Nevada)	23	5.50
Severe Handicap Hunting License (For the purpose of issuing such a license, "severe physical handicap" means a physical disability which materially limits the persons's ability to engage in gainful employment—NRS 502.245)	04	3.50
Indian's Hunting and Fishing License (For a resident Indian with a certificate of eligibility. The license is available only through offices of the Division of Wildlife)	01	Free
Disabled Veteran's Hunting and Fishing License (For a veteran who is a resident of Nevada, having incurred a service-connected disability which is considered to be 50 percent or more by the United States Veterans Administration, and who has received a specified type of discharge from service)	03	Free
Combination License (For persons 16 years of age or older)	24	34.00
Junior Combination Hunting and Fishing License (For persons 12 years through 15 years of age)	26	9.50
Senior Combination Hunting and Fishing License (For a person 65 years of age or older with 6 or more months on Nevada residence)	25	5.50
Severe Handicap Combination Hunting and Fishing License (For the purpose of issuing such a license, "severe physical handicap" means a physical disability which materially limits the person's ability to engage in gainful employment—NRS 502.245)	06	5.50

Nonresident Licenses; Fees:

	Class	*Fee*
Regular Hunting License (For persons of any age)	28	$100.50
10-Day Permit to Hunt Upland Game and Waterfowl	27	50.50

Resident Tags; Fees:

	Fee
Mountain Lion	$50.00

Nonresident Tag Fees:

	Fee
Mountain Lion	$150.00

TRANSPORTATION PERMIT

	Fee
Transportation Permit	$1.00

SPECIAL SEALS

	Fee
Bobcat Seal	$5.00

TRAPPING LICENSES, SEALS, CLASSES AND FEES

(License Year—March 1, 1994 through February 28, 1995)

RESIDENT

	Class	*Fee*
Trapping License (For a person, 16 years of age or older, who takes furbearing mammals by any legal method or unprotected mammals by trapping or sells raw furs for profit)	34	$31.00
Junior Trapping License (For persons age 15 and under, who take furbearing mammals by any legal method or unprotected mammals by trapping or sell raw furs for profit)	35	5.50
Fur Dealer's License (For a person of any age who engages in, or conducts wholly or in part the business of buying, selling, trading, or dealing, within this state, in the skins or pelts of any wild mammal)	77	50.00
Trap Registration Number (For a person who traps wild mammals. Each trap must bear a number registered with the division. Fee is payable once)		5.00

NONRESIDENT

	Class	*Fee*
Trapping License (For a person of any age who takes furbearing mammals by any legal method or unprotected mammals by trapping or sells raw furs for profit)	29	$150.50
Fur Dealer's License (For a person of any age who engages in, or conducts wholly or in part the business of buying, selling, trading, or dealing, within this state, in the skins or pelts of any wild mammal)	95	100.00
Trap Registration Number (For a person who traps wild mammals. Each trap must bear a number registered with the division. Fee is payable once)		5.00

TRANSPORTATION OF WILDLIFE OR RAW FURS TAKEN WITHIN STATE

NRS 503.040 provides in part:

1. Except as provided in this section, it is unlawful for any person at any time to transport or offer for transportation to any place within or outside of this state any game mammal, raw furs, wild mammal taken by trapping, game bird or game fish taken within this state.

2. Any person who has legally taken any game mammal, raw furs, wild mammal taken by trapping, game bird or game fish within this state may use his hunting license, trapping license or fishing license or tag or stamp, when required, as a permit to transport one possession limit to points within or outside the state.

3. Any person who legally acquires ownership or custody of any game mammal, raw furs, wild mammal taken by trapping, game bird or game fish not taken by him through hunting, trapping or fishing may transport such mammal, furs, bird or fish within the state without a transportation permit if such shipment does not exceed one possession limit and if such shipment is labeled with the name, address, number and class of license of the hunter, trapper or fisherman who legally took such mammal, furs, bird or fish and date taken, if the mammal, furs, bird or fish is not required by law or regulation to be tagged. Unless otherwise permitted by a regulation of the commission, when tagged shipments are involved, a transportation permit is required as provided in this section.

4. Any other person who desires to transport any game mammal, raw furs, wild mammal taken by trapping, game fish or game bird to a point within or without the state may do so only under the authority of a transportation permit as provided in this section.

5. The division shall designate the form of the transportation permit and such permits may be issued for a fee of $1.00 by any game warden or other such persons as may be specifically designated by the division. The person legally in possession of the game mammals, raw furs, wild mammals taken by trapping, game birds or game fish to be transported must appear before the issuing agent to obtain a transportation permit. The permit must describe the wildlife to be transported and identify by name, address, license number and class the person who legally took the furs or wildlife and by name and address the person transporting it. Whenever raw furs or wildlife is to be transported by the postal service or by common carrier, freight or express agency, such an agency may be designated by name alone.

6. * * *

7. * * *

8. * * *

ATTACHMENT 4 page 3

GENERAL PROVISIONS

DEFINITIONS

As used in these regulations:

NAC 502.020 "Big game animal" defined.
"Big game animal" means any species of prong-horned antelope, bear, deer, mountain goat, mountain lion, bighorn sheep or elk.

NRS 501.050 "Hunting," "hunted" and "to hunt" defined.
As used in this Title, the words "to hunt" and their derivatives, "hunting" and "hunted," mean to search for, pursue or attract wild mammals or birds for the purpose and with the means of capturing, injuring or killing them, every attempt to capture, injure or kill wild mammals or birds, and every act of assistance to any other person in capturing, injuring or killing such mammals or birds.

NRS 502.015 "Resident" defined.

1. For the purpose of issuing and using resident licenses, tags or permits pursuant to this chapter, a person is considered to be a resident of the State of Nevada if:

(a) He is a citizen of, or is lawfully entitled to remain in, the United States; and

(b) During the 6 months next preceding his application to the division for a license, tag or permit, he:

(1) Was domiciled in this state;

(2) Was physically present in this state, except for temporary absences; and

(3) Did not purchase or apply for any resident license, tag or permit to hunt, fish or trap in another state, country or province.

2. A person who is not domiciled in Nevada but who is attending an institution of higher learning in this state as a full-time student is eligible for a resident license, tag or permit if, during the 6 months next preceding his application to the division for a license, tag or permit, he:

(a) Was physically present in Nevada, except for temporary trips outside of the state; and

(b) Did not purchase or apply for any resident license, tag or permit to hunt, fish or trap in another state, country or province.

3. A resident license, tag or permit issued by this state is void if the person to whom it was issued establishes his domicile in and obtains any privilege or entitlement conditional on residency from another state, country or province.

NRS 501.090 "Trapping" defined.
As used in this Title, the words "to trap" and their derivatives, "trapping" and "trapped," mean to set or operate any device, mechanism or contraption that is designed, built or made to close upon or hold fast any wild mammal or wild bird and every act of assistance to any person in so doing.

NAC 503.153 Steel leg hold traps: definition.
As used in NAC 503.153 to 503.157, inclusive, unless the context otherwise required:

1. "Bait" means the flesh, fur, hide, viscera or feathers of any animal.

2. "Exposed bait" means bait, any portion of which is visible from any angle.

3. "Trap" means any device designed, built or made to close upon or hold fast any wild animal or wild bird.

USE OF TAGS

NAC 502.385 Use of tag.

1. The tag must be carried by the owner at all times while he is hunting or trapping or while he is fishing for wildlife for which a tag is required. It is unlawful for any person to use or possess a tag issued to any other person or to transfer or give a tag issued to him to any other person.

2. It is unlawful for a person to use any tag in a management area or unit for which it is not intended or to use a tag at any time other than at the time intended.

3. After it has been issued, a tag may not be exchanged or a refund made except in accordance with the policies of the commission.

NAC 502.390 Validation of tag.
When a person reaches any wildlife which he has killed, he must validate his tag by cleanly punching out the spaces necessary to properly identify the physical description of the animal including its sex and antler points, where appropriate, and the day and month of the kill.

NAC 502.400 Tag must be attached to animal.

1. Except as provided in subsection 2, the owner of a tag must firmly attach it to the carcass of an animal killed by him, at or before the time he first reaches his means of transportation or camp. The tag must remain with the major portion of the meat until it is consumed.

2. If the animal killed is a mountain lion or furbearing animal for which a tag is required, the owner of the tag must firmly attach it to the hide or pelt of the animal. The tag must remain attached to the hide while it is transported and until it is processed.

LICENSE REQUIREMENTS

NRS 502.010 provides in part:

1. Every person who hunts or traps any of the wild birds or mammals or who fishes without having first procured a license or permit to do so, as provided in this Title, is guilty of a misdemeanor, except that:

(a) No license to hunt or fish is required of a resident of this state who is under 12 years of age, unless required for the issuance of tags as prescribed in this Title or by the regulations of the commission.

(b) * * *

(c) It is unlawful for any child who is under 14 years of age to hunt any of the wild birds or mammals with any firearm, unless the child is accompanied at all times by an adult person licensed to hunt.

(d) No child under 12 years of age, whether accompanied by a qualified person or not, may hunt big game in the State of Nevada. This section does not prohibit any child from accompanying an adult licensed to hunt.

(e) * * *

(f) * * *

2. * * *

NRS 503.454 Requirement for trapping license.

1. Every person who takes furbearing mammals by any legal method or unprotected mammals by trapping or sells raw furs for profit shall procure a trapping license.

2. It is unlawful to remove or disturb the trap of any holder of a trapping license while the trap is being legally used by him on public land or on land where he has permission to trap.

POSSESSION AND DISPLAY OF LICENSE

NRS 502.120 Penalty for refusal to exhibit license or wildlife upon demand; possession of license while hunting, trapping or fishing.

1. Every person required to have a license as provided in this chapter who, while hunting, trapping or fishing, refuses to exhibit the license, any wildlife which he may have in his possession, or any weapon, ammunition, device or apparatus in his possession which may be used for hunting, trapping or fishing, upon the demand of any officer authorized to enforce the fish and game laws of this state, is guilty of a misdemeanor.

2. Every person required to have a license as provided in this chapter who, while hunting, trapping or fishing, fails to have the license in his possession is guilty of a misdemeanor. A person charged with violating this subsection may not be convicted if he produces in court a license previously issued to him and valid at the time of his arrest.

RETURN QUESTIONNAIRES

MOUNTAIN LION RETURN CARD

NAC 502.410 Hunting questionnaire on mountain lions: Completion and return; penalty; reinstatement of privileges.

1. The questionnaire issued as part of a mountain lion tag must be properly completed and returned to the division no later than June 1 following the close of the season.

2. Any person who fails to return the questionnaire within the period specified or who submits incomplete or false information on the questionnaire will be denied all big game tags for 1 year.

3. Any person who has been denied all big game tags pursuant to the provisions of this section may have those privileges reinstated if he pays to the division an administrative fine of $50.

TRAPPING QUESTIONNAIRE

NAC 503.160 Division may obtain data from trappers; penalty.

1. The division may determine methods of obtaining necessary data from trappers relative to their activities and success.

2. It is unlawful for any trapper to fail to return any reporting form or questionnaire of the division or to falsify any information requested. Failure to return such a form or questionnaire within 10 days after the close of the season or the submission of any false statement thereon may be cause to deny the person the right to acquire any trapping license for a period of 2 years.

LEGAL MANNER OF TAKE

LEGAL WEAPONS FOR MOUNTAIN LION

NAC 503.142 provides in part:
A handgun, rifle, shotgun or longbow and arrow may be used to hunt mountain lion.

MANNER OF TRAPPING FURBEARING MAMMALS AND UNPROTECTED MAMMALS

NAC 503.155 Steel leg hold traps: Spacers.
All steel leg hold traps size No. 2 or larger or with an outside jaw spread of 5½ inches or larger used in the taking of any wildlife must have lugs, spacers or similar devices permanently attached so as to maintain a minimum trap opening of three-sixteenths of an inch.

ATTACHMENT 4 page 4

1994–95 FURBEARING MAMMAL SEASONS

(NRS 501.181—CR 94–12)

Species (species not listed are closed)	Season dates (inclusive)	Open counties (all portions thereof not listed are closed)	Footnotes
BEAVER	Oct. 1, 1994-Apr. 2, 1995.	All counties.	Open to nonresidents.
MUSKRAT AND MINK	Oct. 29, 1994-Apr. 2, 1995.	All counties.	Open to nonresidents.
OTTER	Oct. 29, 1994-Apr. 2, 1995.	Clark, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Nye, Pershing, and White Pine counties.	If an otter is accidently trapped or killed in those counties which are closed, the person trapping or killing it shall report the trapping or killing within 48 hours to a representative of the Division of Wildlife. The animal must be disposed of in accordance with the instructions of the representative. Open to nonresidents.
BOBCAT AND GRAY FOX	Dec. 12, 1994-Feb. 12, 1995.	All counties.	A bobcat seal is required for each bobcat harvested (see bobcat regulations). Closed to nonresidents.
KIT FOX	Oct. 1, 1994-Feb. 12, 1995.	All counties.	Open to nonresidents.
UNPROTECTED MAMMALS Coyote, Badger, Weasel, Spotted Skunk, Striped Skunk, Raccoon, and Ring-tailed Cat.	INFORMATION No closed season.	INFORMATION All counties.	Every person who takes furbearing mammals by any legal method or unprotected mammals by trapping or sells raw furs for profit shall procure a trapping license. Open to nonresidents.

ATTACHMENT 5

Appendix J of the Animal Damage Control Program 1994 Final Environmental Impact Statement

METHODS OF CONTROL

Appendix J

Methods of Control

Table of Contents

A. Description of Methods J-1

B. Resource Management J-2

- 1. Animal Husbandry J-2
- 2. Crop Selection and Planting Schedules J-3
- 3. Habitat Management J-3
    - a. Architectural Design J-3
    - b. Modification of Human Behavior J-3
        - (1) Discourage Wildlife Feeding and Handling J-3
        - (2) Alter Aircraft Flight Patterns J-4

C. Physical Exclusion J-4

- 1. Fencing J-4
- 2. Sheathing J-4
- 3. Netting, Porcupine Wire, Wire Grids, and Other Methods J-4

D. Wildlife Management J-5

- 1. Habitat Management J-5
- 2. Lure Crops/Alternate Foods J-6
- 3. Frightening Devices J-6
    - a. Electronic Distress Sounds J-7
    - b. Propane Exploders J-7
    - c. Pyrotechnics J-7
    - d. Lights J-7
    - e. Water Spray Devices J-8
    - f. Harassment J-8
    - g. Other Scaring Devices J-8

4. Chemical Repellents J-8
5. Kill or Relocation Methods J-9
    a. Leghold Traps J-9
    b. Cage Traps J-10
    c. Snares J-10
    d. Quick-Kill Traps J-11
    e. Denning J-11
    f. Shooting J-11
    g. Hunting Dogs J-12
    h. Egg, Nest, and Hatchling Removal and Destruction J-12
6. Chemical Toxicants J-13

A. Description of Methods

The most effective approach to resolving wildlife damage problems is to integrate the use of several methods, either simultaneously or sequentially. Integrated Pest Management (IPM) is the integration and application of practical methods of prevention and control to reduce damage by wildlife while minimizing harmful effects of control measures on humans, other species, and the environment. IPM may incorporate Resource Management, Physical Exclusion, Wildlife Management, or any combination of these, depending on the characteristics of specific damage problems.

In selecting control techniques for specific damage situations, consideration is given to the responsible species and the magnitude, geographic extent, duration and frequency, and likelihood of wildlife damage. Consideration also must be given to the status of target and potential nontarget species, local environmental conditions and impacts, social and legal aspects, and relative costs of control options. The cost of control may sometimes be a secondary concern because of the overriding environmental, legal, and animal welfare considerations. These factors are evaluated in formulating control strategies that incorporate the application of one or more techniques.

A variety of methods are used to accomplish objectives of the current Animal and Plant Health Inspection Service (APHIS) Animal Damage Control (ADC) program. Control strategies are based on applied IPM principles. APHIS ADC employs three general strategies for control of wildlife damage: Resource Management, Physical Exclusion, and Wildlife Management. Each of these approaches is a general strategy or recommendation for addressing wildlife damage situations. Within each approach there are available a number of specific methods or tactics. Selection of the appropriate approach and method is the result of the APHIS ADC decisionmaking process outlined in Chapter 2. Mechanical methods generally are used and recommended in preference to chemical pesticides. No pesticide is used or recommended if it is likely to adversely affect fish, wildlife, food safety, or other components of the natural environment.

Various Federal, State, and local statutes and regulations as well as APHIS ADC Directives govern APHIS ADC use of control tools and substances. The following basic wildlife damage control methods and materials are used or recommended in the direct control and technical assistance efforts of the APHIS ADC program:

- Resource Management
    - Animal Husbandry
    - Crop Selection and Planting Schedules
    - Habitat Management
    - Modification of Human Behavior
- Physical Exclusion
    - Fencing
    - Sheathing (hardware cloth, solid metal, chain link)
    - Tree Protectors
    - Entrance Barricades
    - Netting, Porcupine Wire (Nixalite), Wire Grids, and Other Methods
- Wildlife Management
    - Habitat Management
    - Lure Crops/Alternate Foods

- Frightening Devices
- Chemical Repellents
- Kill or Relocation Methods

The methods listed above all have limitations which are defined by the circumstances associated with individual wildlife damage problems. When APHIS ADC specialists receive a request for assistance, they consider a wide range of limitations as they apply the decisionmaking process described in Chapter 2 to determine what method(s) to use to resolve a wildlife damage problem. Examples of limitations which must be considered and criteria to evaluate various methods are presented in Appendix N and in the following discussions.

B. Resource Management

Resource management includes a variety of practices that may be used by agriculture producers to reduce their exposure to potential wildlife depredation losses. Implementation of these practices is appropriate when the potential for depredation can be reduced without significantly increasing the cost of production or diminishing the resource owner's ability to achieve land management and production goals. Changes in resource management are recommended through the technical assistance extended to producers when the change appears to present a continuing means of averting losses.

1. Animal Husbandry

This general category includes modifications in the level of care and attention given to livestock, shifts in the timing of breeding and births, selection of less vulnerable livestock species to be produced, and the introduction of human custodians or guarding animals to protect livestock.

The level of care or attention given to livestock may range from daily to seasonal. Generally, as the frequency and intensity of livestock handling increase, so does the degree of protection. In operations where livestock are left unattended for extended periods, the risk of depredation is greatest. The risk of depredation can be reduced when operations permit nightly gathering so livestock are unavailable during the hours when predators are most active. Additionally, the risk of depredation is usually greatest with immature livestock. This risk diminishes as age and size increase and can be minimized by holding expectant females in pens or sheds to protect births and by holding newborn livestock in pens for the first 2 weeks. Shifts in breeding schedules can also reduce the risk of depredation by altering the timing of births to coincide with the greatest availability of natural prey to predators or to avoid seasonal concentrations of migrating predators such as golden eagles.

The use of human custodians and guarding animals can also provide significant protection in some instances. The presence of herders to accompany bands of sheep on open range may help ward off predators. Guard dogs have also proven successful in many sheep and goat operations.

Altering animal husbandry to reduce wildlife damage has many limitations. Nightly gathering may not be possible where livestock are in many fenced pastures and where grazing conditions require livestock to scatter. Hiring extra herders, building secure holding pens, and adjusting the timing of births is usually expensive. The timing of births may be related to weather or seasonal marketing of young livestock. The expense associated with a change in husbandry practice may exceed the savings.

The supply of proven guarding dogs is generally quite limited, requiring that most people purchase and rear a pup. Therefore, there is usually a 4-to-8 month period of time necessary to raise a guarding dog before it becomes an effective deterrent to predators. Since 25 to 30 percent of dogs are not successful, there is a reasonable chance that the first dog raised as a protector will not be useful. The effectiveness of guarding dogs may not be sufficient in areas where there is a high density of predators, where livestock widely scatter in order to forage, or where dog-to-livestock ratios are less than recommended. Guarding dogs often harass and kill nontarget wildlife.

2. Crop Selection and Planting Schedules

The choice of crops and the time of planting have a direct bearing on the potential for depredation losses. Some crops are less prone to depredation than others. Crops planted for early or late harvest may have a high potential for wildlife depredation due to the lack of alternate food sources. The composition of native wildlife and their feeding preferences should be considered prior to final selection of crops for production. If migratory wildlife species are involved, it may be possible to regulate the time of planting to reduce or eliminate the availability of vulnerable crops. If altered planting schedules are not feasible, selection of damage-resistant varieties may be possible.

Other resource management approaches include removal of slash, and planting large seedlings immediately after logging to reduce hare and rabbit damage potential; planting or encouraging plant species preferred by deer to improve habitat and reduce the likelihood of browsing damage to commercially grown trees; decreasing cover and foods adjacent to sugar cane to suppress the carrying capacity for rats and other rodents; use of tree species or varieties that are generally resistant to damage by animals; and use of bird-damage resistant hybrids of corn and grain sorghum. In many situations suitable alternative crops might not be available in particular areas or climate zones.

3. Habitat Management

a. Architectural Design

Change in the architectural design of a building or a public space can often help to avoid potential wildlife damage. For example, selecting species of trees and shrubs that are not attractive to wildlife can reduce the likelihood of potential wildlife damage to parks, public spaces, or residential areas. Similarly, incorporating devices into architectural design that exclude wildlife can significantly reduce potential problems. Grids or screens that prevent birds from entering are an example.

Architectural changes are often more feasible if considered during the design stage, rather than after a facility is built. A consideration of wildlife conflicts is frequently overlooked in the construction of new buildings and facilities. Modifying structures or public spaces to remove the potential for wildlife conflicts is often impractical because of economics or the presence of other nearby habitat features that attract wildlife.

b. Modification of Human Behavior

(1) Discourage Wildlife Feeding and Handling

APHIS ADC may recommend alteration of human behavior to resolve potential conflicts between humans and wildlife. For example, APHIS ADC may recommend the elimination of feeding of wildlife that occurs in parks, forest, or residential areas. Many wildlife species adapt well to human settlements and activities, but their proximity to humans may result in damage to structures or threats to public health and safety. Eliminating wildlife feeding and handling can reduce potential problems, but many people who are not directly affected by problems caused by wildlife enjoy wild animals and engage in activities that encourage their presence. It is difficult to consistently enforce no-feeding regulations and to effectively educate all people concerning the potential liabilities of feeding wildlife.

(2) Alter Aircraft Flight Patterns

With respect to airport safety, not all potential danger to human life and aircraft equipment can be dealt with by relocating bird or other wildlife populations. In such cases, APHIS ADC may recommend that aircraft flight patterns be altered to reduce potential problems. However, altering operations at airports to decrease the potential for wildlife hazards is not feasible unless an emergency condition exists. Otherwise, the expense of interrupted flights and the limitations of existing facilities make this practice prohibitive.

C. Physical Exclusion

Physical exclusion methods restrict the access of wildlife to resources. These methods, (including fences, sheathing, netting, porcupine wire, and wire grids) provide a means of appropriate and effective prevention of wildlife damage in many situations. Physical exclusion methods used or recommended by the APHIS ADC program are described in the following section.

1. Fencing

Fences are widely used to prevent damage to farm crops and forest plantations caused by rabbits, deer, and elk. Predator exclusion fences constructed of woven wire or multiple strands of electrified wire are also effective in some areas, but fencing does have limitations. Even an electrified fence is not predator proof and the expense exceeds the benefit in most cases. If large areas are fenced, the predators have to be removed from the enclosed area to make it useful. Some fences inadvertently trap, catch or affect the movement of nontarget wildlife. It is not uncommon for coyotes to use fences to trap deer or antelope. Lastly, fencing is not practical or legal in some areas (e.g., restricting access to public land).

2. Sheathing

Sheathing consists of using hardware cloth, solid metal flashing, or other materials to protect trees from predators or to block entrances to gardens, fish ponds, dwellings, or other areas. Tree protectors are most often used as protection from bears, beavers, or porcupines. Entrance barricades of various kinds are used to exclude bobcats, coyotes, foxes, opossums, raccoons, skunks, or starlings from dwellings, storage areas, gardens, or other areas. Metal flashing may be used to prevent entry of small rodents to buildings. Sheathing may be impractical where there are numerous plants to protect.

3. Netting, Porcupine Wire, Wire Grids, and Other Methods

Netting consists of placing plastic or wire nets around livestock pens, fish ponds, or agricultural areas. Currently, "Vexar" plastic mesh seedling protectors are widely used in reforestation to protect newly planted seedling trees against hares, rabbits, deer, elk, and pocket gophers . Wire and plastic netting are also used to exclude a variety of birds and mammals from many crops, roadways, nurseries, poultry operations, and other areas requiring exclusion of animals. Two types of physical barriers frequently used to protect fish from foraging birds are (1) complete enclosure of ponds and raceways with screen or net and (2) partial exclusion using overhead wires, lines, net, or screen. Complete enclosures are costly but effectively exclude all problem birds. Partial enclosures, such as overhead lines, cost less but may not exclude all bird species. Selection of a barrier system depends on the bird species and expected duration of damage, size of facility, compatibility of the barrier with other operations (e.g., feeding, cleaning, harvesting, etc.), possible damage from severe weather, and effect on site aesthetics. Complete enclosure of ponds and raceways to exclude all fish-eating birds requires 1.5- to 2-inch mesh netting secured to frames or supported by overhead wires. Gates and other openings must also be covered. Some hatchery operators use mesh panels placed directly on raceways to effectively exclude birds. Small mesh netting or wire with less than 1-inch openings, secured to wood or pipe frames, prevents feeding through the panels. Because the panels may interfere with feeding, cleaning, or harvesting operations, they are most appropriate for seasonal or temporary protection.

Ponds or raceways can be protected with overhead wires or braided or monofilament lines suspended horizontally in one direction or in a crossing pattern. Spacing between wires or lines should be based on the species and habits of the birds causing damage.

Perimeter fencing or wire around ponds and raceways provides some protection from wading birds and is most effective for herons. For ponds, fencing at least 3 feet high should be erected in water 2 to 3 feet deep. Small mesh can be used to prevent fish from entering the shallow water. If fences are built in shallow water, birds can easily feed on the pond side of the fence. Raceway fences should be high enough to prevent feeding from the wall. Occasionally, blackbirds will cling to fencing or screening near the water and feed on small fish. A slippery surface created by draping plastic over the fence or screen can be used to eliminate this problem. Electric fences or wires have also been used with limited success. Some areas in need of protection are too large to be protected with netting or overhead wires. This type of exclusion can make routine work around ponds and hatcheries difficult or impossible.

Strips of sharp wire or metal spikes are placed on building ledges to exclude pigeons, sparrows, and other birds. However, many buildings and other structures have exposed surfaces too numerous or large to use wire or metal spikes to exclude birds.

APHIS ADC recommends the use of closed storage containers for edible materials (such as seeds) to prevent access by wildlife.

D. Wildlife Management

Controlling wildlife damage through wildlife management is achieved through the use of a myriad of techniques. The objective of this approach is to alter the behavior of the target animal to eliminate or reduce the potential for loss or damage to property.

1. Habitat Management

Just as habitat management is an integral part of other wildlife management programs, it also plays an important role in wildlife damage control. The type, quality, and quantity of habitat are directly related to the wildlife that are produced. Therefore, habitat can be managed to not produce or attract certain wildlife species. Most habitat management in the APHIS ADC program revolves around airports and bird aircraft strike problems, blackbird and European starling winter roosts, and ground vegetation management to control field rodent populations in orchards and crops.

Habitat management around airports is aimed at eliminating bird nesting, roosting, loafing, or feeding sites. Generally, many bird problems on airport grounds can be minimized through management of vegetation (grass, shrubs, brush, and trees) and water from runway areas.

Habitat management also is often necessary to control damage caused by blackbirds and starlings that form large roosts during late fall and winter. Bird activity can be terminated at a roost site by removing all the trees or selectively thinning the stand. Roosts often will re-form at traditional sites, and substantial habitat alteration is the only way to permanently stop such activity.

Dense rodent populations pose a threat to various agricultural operations such as orchards. Maintaining grass cover at minimum heights is necessary in controlling rodent populations in orchards. Eliminating grass in reforestation areas also aids in reducing vole damage to trees.

Certain areas experience damage as a result of beaver dam construction on streams and rivers. Damage to roadways, railways, earthen dams, buildings, and crops results primarily from flooding, but crop and timber losses can also occur from beaver foraging activities. When used in conjunction with the removal of beaver, selective use of explosives to remove watercourse obstructions is a habitat modification method.

Several measures are available to alleviate pocket gopher damage to forest plantations. Leaving strips of uncut timber between logged areas and gopher-infested areas is recommended to reduce the potential of severe gopher damage problems in clear-cutting operations. Selective cutting and replanting, instead of clear-cutting, are recommended to reduce the potential for gopher damage in some areas. Common forest management practices such as weed and grass control can also reduce gopher populations and damage potential.

Limitations of habitat management as a method of controlling wildlife damage are determined by the characteristics of the species involved, the nature of the damage, economic feasibility, and other factors. Also, legal constraints may exist which preclude altering particular habitats.

2. Lure Crops/Alternate Foods

When depredation cannot be avoided by careful crop selection or modified planting schedules, lure crops can sometimes be used to mitigate the loss potential. Lure crops are planted or left for consumption by wildlife as an alternative food source. This approach provides relief for critical crops by sacrificing less important or specifically planted fields. For lure crops to be successful, frightening techniques may be necessary in fields where crops are to be protected; wildlife should not be disturbed in sacrificial fields.

Establishing lure crops is expensive, requires considerable time and planning to implement, and may attract other unwanted species to the area, causing additional wildlife damage problems. Also, there are potential legal consequences regarding hunting near lure crops, which must be considered before lure crops or alternate foods are used.

3. Frightening Devices

The success of frightening methods depends on animals' fear of, and subsequent aversion to offensive stimuli. Once animals become habituated to a stimulus, they often resume their damaging activities. Persistent effort is usually required to consistently apply frightening techniques and then vary them sufficiently to prolong their effectiveness. Over time, some animals learn to ignore commonly used scare tactics. In many cases animals frightened from one location become a problem at another. The effects of frightening devices on nontarget wildlife need to be considered. For example, sensitive birds may be disturbed or frightened from nesting sites.

a. Electronic Distress Sounds

Distress and alarm calls of various animals have been used singly and in conjunction with other scaring devices to successfully scare or harass animals. Many of these sounds are available on records and tapes. Calls should be played back to the animals from either fixed or mobile equipment in the immediate or surrounding area of the problem. Animals react differently to distress calls; their use depends on the species and the problem. Calls may be played for short (few second) bursts, for longer periods, or even continually, depending on the severity of damage and relative effectiveness of different treatment or "playing" times. Some artificially created sounds also repel birds in the same manner as recorded "natural" distress and alarm calls.

b. Propane Exploders

Propane exploders operate on propane gas and are designed to produce loud explosions at controllable intervals. They are strategically located (elevated above the vegetation, if possible) in areas of high wildlife use to frighten wildlife from the problem site. Because animals are known to habituate to sounds, exploders must be moved frequently and used in conjunction with other scare devices. Exploders can be left in an area after dispersal is complete to discourage animals from returning.

c. Pyrotechnics

Double shotgun shells, known as shellcrackers or scare cartridges, are 12-gauge shotgun shells containing a firecracker that is projected up to 75 yards in the air before exploding. They can be used to frighten birds or mammals but are most often used to prevent crop depredation by birds or to discourage birds from undesirable roost locations. The shells should be fired so they explode in front of, or underneath, flocks of birds attempting to enter crop fields or roosts. The purpose is to produce an explosion between the birds and their objective. Birds already in a crop field can be frightened from the field; however, it is extremely difficult to disperse birds that have already settled in a roost.

Noise bombs, whistle bombs, racket bombs, and rocket bombs are fired from 15 millimeter flare pistols. They are used similarly to shellcrackers but are projected for shorter distances. Noise bombs (also called bird bombs) are firecrackers that travel about 75 feet before exploding. Whistle bombs are similar to noise bombs, but whistle in flight and do not explode. They produce a noticeable response because of the trail of smoke and fire, as well as the whistling sound. Racket bombs make a screaming noise in flight and do not explode. Rocket bombs are similar to noise bombs but may travel up to 150 yards before exploding.

A variety of other pyrotechnic devices, including firecrackers, rockets, and Roman candles, are used for dispersing animals. Firecrackers can be inserted in slow-burning fuse ropes to control the timing of each explosion. The interval between explosions is determined by the rate at which the rope burns and the spacing between firecrackers.

d. Lights

A variety of lights, including strobe, barricade, and revolving units, are used with mixed results to frighten birds. Brilliant lights, similar to those used on aircraft, are most effective in frightening night-feeding birds. These extremely bright-flashing lights have a blinding effect, causing confusion that reduces the bird's ability to catch fish.

Flashing amber barricade lights, like those used at construction sites, and revolving or moving lights may also frighten birds when these units are placed on raceway walls or fish pond banks. However, most birds rapidly become accustomed to such lights and their long-term effectiveness is questionable. In general, the type of light, the number of units, and their location are determined by the size of the area to be protected and by the power source available.

e. Water Spray Devices

Water sprays from rotating sprinklers placed at strategic locations in or around ponds or raceways will repel certain birds, particularly gulls. However, individual birds may become accustomed to the spray and feed among the sprinklers. Best results are obtained when high water pressure is used and the sprinklers are operated with an on-off cycle. The sudden startup noise also helps frighten the birds.

f. Harassment

Scaring and harassment techniques to frighten animals are probably the oldest methods of combating wildlife damage. A number of sophisticated techniques have been developed to scare or harass wildlife from an area. The use of noise-making devices is the most popular and commonly used; however, other methods, including aerial hazing and visual stimuli, are also used. Harassment using vehicles, people, falcons or dogs is used to frighten predators or birds from the immediate vicinity. Boats, planes, automobiles, and all-terrain vehicles are used as harassment methods. As with other wildlife damage control efforts, these techniques tend to be more effective when used collectively in a varied regime rather than individually. However, the continued success of these methods frequently requires reinforcement by limited shooting (see Shooting).

g. Other Scaring Devices

Owl decoys, reflective Mylar tape, scarecrows, ribbons, plastic bags, suspended pie pans, and helium-filled balloons may be used as scaring devices. Their effectiveness is enhanced when they are used in conjunction with auditory scare devices. The Electronic Guard, a portable unit that houses a strobe light and siren has been developed by the Denver Wildlife Research Center and is produced by the Pocatello Supply Depot. In certain situations, this device has been used successfully to reduce coyote depredation on sheep. The device activates automatically at nightfall and is programmed to discharge periodically throughout the night. The technique has proven most successful when used at “bedding grounds” where sheep gather to sleep for the night.

4. Chemical Repellents

Chemical repellents are compounds that prevent consumption of food items or use of an area. They operate by producing an undesirable taste, odor, feel, or behavior pattern.

Effective and practical chemical repellents should be nonhazardous to wildlife; nontoxic to plants, seeds, and humans; resistant to weathering; easily applied; reasonably priced; and capable of providing good repelling qualities. The reaction of different animals to a single chemical formulation varies, and for any species there may be variations in repellency between different habitat types.

Several paste repellents are used to repel birds around structures. These are grease-like materials that are either sprayed or applied with a caulking gun to window sills, ledges, or similar perches to discourage birds. They are most frequently used in urban areas to control pigeon and starling problems.

The avian frightening agent Avitrol (4-aminopyridine) is used to deter birds from specific crops and areas. Avitrol is a toxic chemical but is used as an area repellent. It is used primarily to control flocking blackbirds and starlings that cause crop depredation problems, but it may also be used to control gulls, pigeons, sparrows, and crows. Avitrol is applied as a mixture of treated and untreated grain. After prebaiting with untreated grain to establish a satisfactory feeding pattern, the treated mixture is placed for consumption by the target flock of birds. The few birds that eat treated grain usually die, but in the process they emit distress calls and fly erratically. A large number of untreated birds in the flock will respond to the distress calls of the few affected individuals. This behavior frightens the other birds in the flock from the area.

Avitrol is also used to repel gulls from garbage dumps and airports. Caution must be exercised when Avitrol is used for this purpose because gulls tend to fly in a spiraling or towering pattern over bait sites when reacting to birds that exhibit distress symptoms. The towering behavior of gulls may temporarily create a bird collision hazard for aircraft operations.

Development of chemical repellents is expensive and cost prohibitive in many situations. Chemical repellents are strictly regulated, and suitable repellents are not available for many wildlife species or wildlife damage situations.

5. Kill or Relocation Methods

a. Leghold Traps

Leghold traps are used to capture animals such as the coyote, bobcat, fox, mink, beaver, raccoon, skunk, muskrat, nutria, and mountain lion. These traps are the most versatile and widely used tool for capturing these species. They are used in both terrestrial and shallow aquatic environments. The leghold trap can be set under a wide variety of conditions but can be difficult to keep in operation during rain, snow, or freezing weather. When placed without baits in the travel lanes of target animals, leghold traps are known as “trail sets.” More frequently, traps are placed as “baited sets,” meaning that they are used with a bait consisting of the animal’s preferred food or some other lure, such as fetid meat, urine, or musk, to attract the animal. In some situations a “draw station,” such as a carcass or large piece of meat, is used to attract target animals. In this approach, one to several traps are placed in the vicinity of the draw station. APHIS ADC program policy prohibits placement of traps closer than 30 feet to the draw station. This provides protection to scavenging birds.

Various tension devices can be used to prevent animals smaller than target animals from springing the trap. Effective trap placement also contributes to trap selectivity; however, livestock and nontarget animals may still be captured. These traps usually permit the release of nontarget animals.

Pole traps can be effectively used to capture raptors (hawks and owls) because of their behavioral tendency to perch on isolated limbs, poles, and other prominent structures. One to several poles, 5 to 10 feet high, are erected and a padded-jaw leghold trap (usually size $1^1/_2$) is set on the top of each pole. A steel wire is passed through the trap chain and attached to the top and base of the pole to allow the trap and bird to slide to the ground after being captured.

Before leghold traps are employed, their limitations must be considered. Injury to target and nontarget animals, including livestock, may occur. Weather and the skill of the user will often determine the success or failure of the leghold trap in preventing or stopping wildlife damage.

b. Cage Traps

A variety of cage traps are used in different wildlife damage control efforts. The most commonly known cage traps used in the current program are box traps. Box traps are usually rectangular, made from wood or heavy gauge mesh wire. These traps are used to capture animals alive and can often be used where many lethal or more dangerous tools would be too hazardous. Box traps are well suited for use in residential areas.

Cage traps usually work best when baited with foods attractive to the target animal. They are used to capture animals ranging in size from mice to deer, but are usually impractical in capturing most large animals. They are virtually ineffective for coyotes; however, large cage traps work well to capture bears and have shown promise for capturing mountain lions, provided the traps can be transported by vehicle to the control sites.

Cage traps made of flexible mesh wire are effective for capturing beaver in some situations. Resembling fully or partially open suitcases when set, these traps are best suited for use in fairly shallow water at the beavers' entrance and exit routes or in water travel lanes. The traps can be baited with an ear of corn or a fresh piece of aspen, cottonwood, willow, or other woody plant.

Large decoy traps, modeled after the Australian crow trap, are used to capture starlings, blackbirds, crows, and ravens. They are large screen enclosures with the access modified to suit the target species. A few live birds are maintained in the baited trap to attract birds of the same species and, as such, act as decoys. Nontarget species are released unharmed.

There are some animals that avoid cage traps and others that become "trap happy" and purposely get captured to eat the bait, making the trap unavailable to catch other animals. Cage traps must be checked frequently to ensure that captured animals are not subjected to extreme environmental conditions. Some animals fight to escape from cage traps and become injured.

c. Snares

Snares made of wire or cable are among the oldest existing control tools. They can be used effectively to catch most species but are most frequently used to capture coyotes, beaver, and bears. They have limited application but are effective when used under proper conditions. They are much lighter and easier to use than leghold traps and are not generally affected by inclement weather.

Snares may be employed as either lethal or live-capture devices depending on how and where they are set. Snares set to capture an animal by the neck are usually lethal, whereas snares positioned to capture the animal around the body can be useful live-capture devices. These snares can be effectively used wherever a target animal moves through a restricted lane of travel (i.e., "crawls" under fences, trails through vegetation, or den entrances). When an animal moves forward into the loop formed by the cable, the noose tightens and the animal is held.

The foot or leg snare is a spring-powered nonlethal device, activated when an animal places its foot on the trigger. Foot snares are used effectively to capture both grizzly and black bears and mountain lions.

In some situations using snares to capture wildlife is impractical due to the behavior or animal morphology of the animal, or the location of many wildlife conflicts. Snares must be set in locations where the likelihood of capturing nontarget animals is minimized.

The catch-pole snare is used to capture or safely handle problem animals. This device consists of a hollow pipe with an internal cable or rope that forms an adjustable noose at one end. The free end of the cable or rope extends through a locking mechanism on the end opposite of the noose. By pulling on the free end of the cable or rope, the size of the noose is reduced sufficiently to hold an animal. Catch poles are used primarily to remove live animals from traps without danger to or from the captured animal.

d. Quick-Kill Traps

A number of specialized "quick-kill" traps are used in wildlife damage control work. They include Conibear, snap, gopher, and mole traps.

Conibear traps are used mostly in shallow water or underwater to capture muskrat, nutria, and beaver. The Conibear consists of a pair of rectangular wire frames that close like scissors when triggered, killing the captured animal with a quick body blow. Conibear traps have the added features of being lightweight and easily set.

Snap traps are common household rat or mouse traps usually placed in buildings. These traps are often used to collect and identify rodent species that cause damage so that species-specific control tools can be applied. If an infestation is minor, these traps may be used as the primary means of control. Glue boards (composed of shallow, flat containers of an extremely sticky substance) are also used as an alternative to snap traps.

Spring-powered harpoon traps are used to control damage caused by surface-tunneling moles. Soil is pressed down in an active tunnel and the trap is placed at that point. When the mole reopens the tunnel, it triggers the trap and is killed. Two variations of scissor-like traps are also used in burrows for both mole and pocket gopher population control.

Some quick-kill traps are potentially dangerous to people and cannot be used in populated areas. Quick-kill traps are available only for a limited number of species.

e. Denning

Denning is the practice of seeking out the dens of depredating coyotes or red fox and destroying the young, adults, or both to stop or prevent depredations on livestock. Denning is used in coyote and red fox damage control efforts primarily in the western States. The usefulness of denning as a damage control method is limited because coyote and red fox dens are difficult to locate in many parts of the country and den use is restricted to approximately 2 to 3 months during the spring.

Coyote and red fox depredations on livestock and poultry often increase in the spring and early summer because of the increased food requirements caused by the need to feed pups. The removal of pups will often stop depredations even though the adults are not taken. When the adults are taken it is customary to kill the pups to prevent their starvation. In this method, pups are removed from dens by excavation and then shot, or they are killed in the den with a registered fumigant. Denning is highly selective for the target species and family groups responsible for damage.

Den hunting for adult coyotes and fox and their young is often combined with calling and shooting.

Denning can be labor intensive with no guarantee of finding the den of the target animal.

f. Shooting

Shooting is used selectively for target species but may be relatively expensive because of the staff hours sometimes required. Nevertheless, shooting is an essential control method. Removal of one or two problem woodpeckers, for example, can stop extensive woodpecker damage to residences or other buildings. Removal of beaver may be achieved by night shooting because beaver are primarily active at that time. Many airports have perimeter fences for security purposes that also confine resident deer populations. These deer frequently stray onto active runways and pose a significant threat to aircraft. Removal of these deer may be effectively achieved by shooting.

Lethal reinforcement through shooting is often necessary to ensure the continued success in bird scaring and harassment efforts (see the discussion on shooting under Modification of Human Behavior). This is especially important where birds are drawn by ripening crops, aquaculture and mariculture facilities, sanitary landfills, and other locations where food is readily available. In situations where the feeding instinct is strong, most birds quickly adapt to scaring and harassment efforts unless the control program is periodically supplemented by shooting.

Shooting is frequently performed in conjunction with calling particular predators such as coyotes, bobcats, and fox. Trap-wise coyotes are often vulnerable to calling.

Shooting from aircraft, or aerial hunting, is a commonly used coyote damage control method. Aerial hunting is species-selective and can be used for immediate control where livestock losses are severe if weather, terrain, and cover conditions are favorable. Aerial hunting can be effective in removing offending coyotes that have become "bait-shy" or are not susceptible to calling and shooting. Local depredation problems can often be quickly resolved by the use of aerial hunting.

Fixed-wing aircraft are useful for aerial hunting over flat and gently rolling terrain. Because of to their maneuverability, helicopters have greater utility and are safer over , timbered areas, or broken land where animals are more difficult to spot. In broken timber or deciduous ground cover, aerial hunting is more effective in winter when snow cover improves visibility.

The APHIS ADC program aircraft-use policy helps ensure that aerial hunting is conducted in a safe and environmentally sound manner, in accordance with Federal and State laws. Pilots and aircraft must be certified under established APHIS ADC program procedures. Only properly trained APHIS ADC program employees are approved as gunners.

Shooting is limited to locations where it is legal and safe to discharge firearms. Shooting may be ineffective for controlling damage by some species and may actually be detrimental to control efforts. For example, ill-advised attempts to move winter roosts of blackbirds with live ammunition cripple some birds. These birds remain in the trees, and by their presence and noise often lure other birds to the roost site.

g. Hunting Dogs

Dogs are essential to successful hunting of mountain lion and bear. Dogs trained for coyote denning are also valuable in luring adult coyotes to be shot. Trained dogs are used primarily to locate, pursue, or decoy animals.

Training and maintaining suitable dogs requires considerable skill, effort, and expense. There must be sufficient need for dogs to make the effort worthwhile.

h. Egg, Nest, and Hatchling Removal and Destruction

Nesting populations of cattle egrets and gulls, especially if located near airports, may pose a threat to public health and safety, as well as equipment. Pigeons and starlings can also cause extensive damage to public facilities. Egg and nest destruction is used mainly to control or limit the growth of a nesting population in a specific area through limiting reproduction of offspring or removal of nest to other locations. Egg and nest destruction is practiced by manual removal of the eggs or nest.

This method is practical only during a relatively short time interval and requires skill to properly identify the eggs and hatchlings of target species. Some species may persist in nesting and the laying of eggs, making this method ineffective.

6. Chemical Toxicants

Several toxic chemicals have been developed to control wildlife damage and are widely used because of their efficiency. Toxicants are generally not species specific, and their use may be hazardous unless used with care by knowledgeable personnel. The proper placement, size, type of bait, and time of year are keys to selectivity and successful control. Development of appropriate toxicants is expensive, and the path to a suitable end product is filled with legal and administrative hurdles. Few private companies are inclined to undertake such a venture. Most chemicals are aimed at a specific target species, and suitable chemicals are not available for most animals. Available delivery systems make the use of chemical toxicants unsuitable in many wildlife damage situations. This section describes the chemical toxicants used in the present APHIS ADC program.

Zinc phosphide is a metallic toxicant most often used for rat, vole, muskrat, and nutria damage control. Zinc phosphide baits are prepared with sweet potatoes, carrots, or apples for nutria and muskrat damage control, and with apples, cracked corn, or oats for vole control. Canned dog and cat food treated with zinc phosphide is used for rat control. Zinc phosphide is coated (using vegetable oil) or dusted on the bait; the baits are then tumbled to ensure even distribution. The odor of zinc phosphide is attractive to rodents but repulsive to most other animals. Tarter emetic is sometimes added to baits used to control rats. This safety feature will cause most other species to regurgitate any zinc phosphide baits they may consume. Its effectiveness for rat control is not compromised because rats are unable to regurgitate.

Treated baits for muskrats can be placed in their burrows, into their runways, or on rafts anchored in the vicinity of damage. Raft baiting can also be effective for nutria. Application of zinc phosphide baits for vole control varies according to each situation and species involved. Baits are either broadcast on the surface or placed in underground runways using the trail builder, a variation of the burrow builder (see the description below under strychnine). Trail builders are used to control vole damage in orchards or other ornamental or commercial tree plantings. Zinc phosphide-treated grain baits are widely used for controlling rodent damage in forests and prairie dog damage in rangelands.

Several anticoagulant rodenticides are used to control commensal rodents and some field rodents around buildings and other structures. Common anticoagulants include warfarin and diphacinone. Anticoagulants are normally classified as multiple-dose toxicants. For the materials to be effective, animals must feed on the bait more than once. However, some newer formulations only require a single feeding to be effective. Bait for rats and mice must be continuously available for 2 to 3 weeks for effective population control. Anticoagulants may be mixed with water or with dry bait, such as rolled oats, corn meal, cracked grains, or presented in combination.

Strychnine is a white, bitter-tasting toxicant that is very toxic to most mammals and birds, with the exception of gallinaceous birds, which are relatively resistant. Strychnine has been used on grain baits for aboveground use to control damage caused by various field rodents, pigeons, and house sparrows. However, in 1988 all aboveground uses were temporarily canceled.

For below-ground use in reducing pocket gopher populations, strychnine is dispensed using the tractor-drawn burrow builder, which constructs an underground artificial burrow and places strychnine-treated oat baits in the simulated gopher burrow. The artificial burrows are constructed 20 to 60 feet apart, usually at a depth of 8 to 12 inches. During their underground travels, the gophers intersect the artificial burrows, consume the toxic bait, and die underground. Gopher damage can also be controlled by hand placement of the toxicant in the natural burrow system. These methods of application are used in both agricultural and forest areas where gophers are a problem.

Porcupine blocks are short lengths of 2- by 4-inch lumber that are treated with a mixture of strychnine and salt. They are used in nonagricultural areas to control porcupine damage to trees. The blocks, treated with salt, are attractive to porcupines. In application, the blocks are nailed to tree trunks about 8 inches above a large branch and 10 feet or more above the ground or snow line. However, porcupine blocks are no longer used. The registration was voluntarily withdrawn in 1989.

Sodium cyanide is used in the M-44, a spring-activated ejector device developed specifically to kill coyotes and other canine predators. The M-44 device consists of a capsule holder wrapped with fur, cloth, or wool; a capsule containing 0.8 gram of powdered sodium cyanide; an ejector mechanism; and a 5- to 7-inch hollow stake. The hollow stake is driven into the ground, the ejector unit is cocked and placed in the stake, and the capsule holder containing the cyanide capsule is screwed onto the ejector unit. A fetid meat bait is spread on the capsule holder. An animal attracted by the bait will try to pick up or pull the baited capsule holder. When the M-44 is pulled, a spring-activated plunger propels sodium cyanide into the animal's mouth.

Compound 1080, or sodium fluoroacetate, has been widely used as a rodenticide since the mid-1940s. It was also used in predacide baits prior to 1972. Currently, the only registered use of this chemical is in controlling predators with the Livestock Protection Collar (LP Collar).

Fumigants or gases used to control burrowing wildlife are efficient but often expensive. In the APHIS ADC program, fumigants are only used in rodent burrows and in predator dens. The APHIS ADC program manufactures at the Pocatello Supply Depot, and uses den cartridges especially formulated for these purposes. The cartridges are placed in the active burrows of target animals, the fuse is lit, and the entrance is then tightly sealed with soil. The burning cartridge causes death by oxygen depletion and carbon monoxide poisoning. Aluminum phosphide tablets are also used as a fumigant in prairie dog burrows.

Starlicide baits, containing DRC-1339, are commercially available to control starlings and blackbirds in cattle and hog feedlots and poultry yards. DRC-1339 is highly toxic to starlings and blackbirds, well accepted by these species, relatively nontoxic to mammals, and generally of low toxicity to most other birds. Poultry pellet baits are placed in feeding stations or scattered outside feed bunkers. After ingesting the baits, most of the birds die away from the roost site. This material is most effective in northern areas when snow covers most food supplies, causing starlings to congregate in feedlots.

Starlicide is available to the public only in poultry pellets containing a low concentration of the chemical. Best results with this formulation are achieved when similar pellets are being used as livestock feed in the problem area.

DRC-1339 concentrate is used effectively in hard-boiled eggs to control raven damage under several State-specific registrations for the protection of livestock and certain endangered species. It is also registered for application on various materials, such as grain, meat baits, sandwich bread, and cull French fries to control pigeons, gulls, crows, ravens, blackbirds, and starlings. DRC-1339 concentrate is only available for use under APHIS ADC program supervision.

The avian stressing agent PA-14 is used to reduce populations of roosting blackbirds and starlings during the winter months. PA-14 is a surfactant that lowers the surface tension of water. When sprayed on birds, the chemical action of the surfactant breaks down the oil in the feathers, removing the natural waterproofing. When the feathers become soaked and matted from a combination of PA-14 solution and water, the insulating effect of the feathers is lost. This results in increased heat conductivity from the bird's body, and is enhanced by evaporation. If temperatures are low enough, the energy loss cannot be offset by increased metabolism; therefore, the body temperature of treated birds eventually drops to a lethal level. This is the only toxicant currently registered to control blackbirds and starlings at winter roosts.

ATTACHMENT 6

Selected References from Appendix Q
Animal Damage Control Program
1994 Final Environmental Impact Statement

EPA - APPROVED REGISTRATIONS FOR PESTICIDES DESCRIBED IN THIS ENVIRONMENTAL ANALYSIS

Appendix Q

EPA-Approved Registrations for Pesticides Used in the APHIS Animal Damage Control Program

Table of Contents

Introduction Q-1

Part I Q-2

Product Labels for FIFRA Section 3 Registrations Held by
U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Animal Damage Control

Part II Q-36

List of State and Local Need (FIFRA Section 24c) and Experimental Use
(FIFRA Section 5) Registrations Held by
U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Animal Damage Control

Part III Q-38

List of Commercially Registered Products Used, Supervised, or
Distributed by
U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Animal Damage Control

Introduction

Pesticides are authorized for use under four sections of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Most products are registered under FIFRA Section 3. Research to develop and evaluate new materials is conducted under experimental use permits (Section 5). Pest control emergencies that necessitate use of unregistered products may be authorized under Section 18. State and local need (SLN) registrations are issued under Section 24(c), and are limited to authorization of expanded uses for products already registered under Section 3.

Labels for FIFRA Section 3 registrations held by the Animal and Plant Health Inspection Service (APHIS) during fiscal years (FY) 1988 through 1991 appear in Part I of this appendix. SLN registrations and experimental use permits are listed in Part II. Parts I and II include all registrations held by APHIS during FY 1988 through 1991 even though some of these products were not used during that period.

In addition to pesticide products registered by APHIS, the Animal Damage Control (ADC) program uses, supervises the use of, recommends or distributes some commercially registered products. Registrations for these commercially registered materials are listed in Part III.

All pesticide registrations under FIFRA are administered by the U.S. Environmental Protection Agency (EPA). In addition to registered pesticides, the APHIS ADC program also uses several drugs that are regulated by the U.S. Food and Drug Administration (FDA) as shown in Parts II and III of this Appendix.

Part A

Product Labels for FIFRA Section 3 Registrations Held by U.S. Department of Agriculture Animal and Plant Health Inspection Service Animal Damage Control

Product	Page
Gas cartridge	Q-3
Gas cartridge for coyotes	Q-5
Compound DRC-1339 98% concentrate	Q-6
1339 Gull toxicant 98% concentrate	Q-7
Compound PA-14 avian stressing agent	Q-8
M-44 cyanide capsules	Q-9
Sodium fluoroacetate (Compound 1080) Livestock Protection Collar	Q-13
Compound 1080 (LPC) (Technical)	Q-15
Strychnine alkaloid N.F.X. powder (technical)	Q-16
Pigeon bait strychnine corn	Q-17
0.35% Strychnine milo	Q-18
0.5% Strychnine S.R.O. field rodent bait	Q-20
0.35% Strychnine milo for hand baiting pocket gophers	Q-22
0.5% Strychnine S.R.O. for hand baiting pocket gophers	Q-23
Porcupine block strychnine-salt mixture	Q-24
1.6% Strychnine paste	Q-25
Zinc phosphide concentrate for mouse control	Q-27
Zinc phosphide concentrate for rat control	Q-28
Zinc phosphide concentrate for muskrat and nutria control	Q-29
Zinc phosphide on wheat for mouse control	Q-31
Zinc phosphide on steam-rolled oats for mouse control	Q-33
Zinc phosphide on steam-rolled oats for prairie dog control	Q-34
Zinc phosphide on rolled oat groats for ground squirrel control	Q-35

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING

After ignition, cartridge produces toxic gases . Fumes may be harmful if inhaled.

ENVIRONMENTAL HAZARDS

This product is highly toxic to wildlife. Check all burrows for signs of nontarget species. If present, do not treat burrows.

CHEMICAL HAZARDS

Once ignited by the fuse, this cartridge will burn vigorously until completely spent and is capable of causing severe burns to exposed skin and clothes, and of igniting dry grass, leaves and other combustible materials.

ENDANGERED SPECIES CONSIDERATIONS

NOTICE: It is a Federal offense to use any pesticide in a manner that results in the death of a member of an endangered species.

Black-Footed Ferret: Do not use this product in the range of the black-footed ferret. Contact the nearest U.S. Fish and Wildlife Service office (Endangered Species Specialist) before the product is used. They will arrange for a survey of the proposed use site.

Utah Prairie Dog: Do not use this product in the range of the Utah prairie dog. (Utah)

San Joaquin Kit Fox: This pesticide should not be used within 1 mile of active dens of the San Joaquin kit fox in the following California counties: Kern, Kings, Fresno, San Luis, Obispo, Merced, Monterey, Santa Barbara, Ventura, Tulare, and San Benito. Prior to use, contact the California Department of Fish and Game for recommendations.

Blunt-Nosed Leopard Lizard: This pesticide should not be used in the range of the blunt-nosed leopard lizard in the following California counties: Kern, Fresno, Kings, Madera, Merced, and Tulare. Prior to use, contact the California Department of Fish and Game for recommendations.

Eastern Indigo Snake: Do not use this product in the range of the eastern indigo snake in the following states: Mississippi, Alabama, South Carolina, Georgia, and Florida.

Desert Tortoise: This pesticide should not be used in the critical habitat of the Beaver Dam slope population of the desert tortoise in Utah. This comprises an area extending from the southwest facing slope of the Beaver Dam Mountains, across Highway 91, west along the Arizona border and 10 miles to the Nevada border.

GAS CARTRIDGE

For control of woodchucks, ground squirrels, prairie dogs and pocket gophers.

NOT FOR SALE TO PERSONS UNDER
16 YEARS OLD

ACTIVE INGREDIENTS:	
Sulphur	10.84%
Charcoal	17.34%
Red Phosphorus	3.25%
Mineral Oil	14.09%
Sodium Nitrate	43.36%
Sawdust	3.52%
Total	92.40%
INERT INGREDIENTS:	
Borax	3.25%
Fullers Earth	4.35%
Total	7.60%
TOTAL	100.00%

KEEP OUT OF REACH OF CHILDREN

WARNING

STATEMENT OF PRACTICAL TREATMENT
CALL A PHYSICIAN OR POISON CONTROL CENTER
IMMEDIATELY!

If inhaled and person has poisoning symptoms (headache, nausea, dizziness, weakness), transfer victim to fresh air. Have victim lie down and keep warm. If respiration is adequate, recovery will be rapid. If breathing has stopped, use artificial respiration. If available, pure oxygen should be given.

SEE LEFT SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
ANIMAL DAMAGE CONTROL
Hyattsville, MD 20782
EPA Est. No. 56228-ID-1
EPA Reg. No. 56228-2

Net Weight 85 grams

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store in cool, dry place away from fire, heat and direct sunlight.

PESTICIDE DISPOSAL: To dispose of unused cartridges, soak in water, crush and bury at least 6" in loose soil.

CONTAINER DISPOSAL: Place in trash collection.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

USE RESTRICTIONS

For control of woodchucks, ground squirrels, prairie dogs, and pocket gophers in open fields, non-crop areas, rangelands, reforested areas, lawns, and golf courses. For use only inside of burrows. Do not use near flammable material or inside buildings.

APPLICATION DIRECTIONS

Select burrow for treatment and obtain material to plug the entrance. Then, with a nail at least 1/8" in diameter, puncture cap at end of cartridge at points marked. Insert fuse in one of center holes. Insure that there is a minimum of 3 inches of exposed fuse. Hold cartridge away from face and body, then light.

NOTE: The minimum burn time for these fuses is 5 seconds.

Place cartridge, fuse-end first, as far into the burrow as possible. Close entrance to burrow immediately.

REFER TO BACK PANEL FOR TARGET-SPECIFIC DIRECTIONS FOR USE.

6/89

DIRECTIONS FOR USE *(Continued)*

TARGET-SPECIFIC DIRECTIONS FOR USE

WOODCHUCKS: Locate all burrow entrances if possible. Select one for treatment and close all others with rock and soil. Light fuse and insert cartridge fuse-end first. Cover opening with rock and soil, being careful not to smother cartridge. Consult state game laws before using this product for woodchuck control.

GROUND SQUIRRELS and PRAIRIE DOGS: Collect soil and other material to close burrow openings. Treat each burrow opening by lighting fuse and inserting cartridge into burrow, fuse-end first (make sure burrow is large enough for easy insertion of cartridge before lighting fuse). Cover burrow immediately, taking care not to smother cartridge with loose soil. Immediately cover all nearby cracks in soil or openings from which gas escapes. Proceed to nearest open burrow and follow same procedure.

POCKET GOPHERS: Locate fan-shaped soil mounds with signs of recent activity. Find the horseshoe-shaped depression on one side of the mound. To locate the main runway, probe ground 15-18 inches from mound on the same side as depression. The main runway has been located when friction on probe is released and it falls into runway. Dig down to main runway, taking care to not block it with soil. Locate an opening large enough for easy insertion of the cartridge. Collect enough soil and other material to close opening. Light fuse and insert cartridge fuse-end first. Immediately cover opening, taking care not to smother cartridge with loose soil. Cover all nearby cracks in soil where gas escapes. Treat all active mounds.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING

After ignition, cartridge produces the toxic gas, carbon monoxide. Fumes may be harmful if inhaled.

ENVIRONMENTAL HAZARDS

This product is highly toxic to wildlife. Check all burrows for signs of nontarget species. If present, do not treat burrows.

CHEMICAL HAZARDS

Once ignited by the fuse, this cartridge will burn vigorously until completely spent and is capable of causing severe burns to exposed skin and clothes, and of igniting dry grass, leaves and other combustible materials.

ENDANGERED SPECIES CONSIDERATIONS

NOTICE: It is a Federal offense to use any pesticide in a manner that results in the death of a member of an endangered species.

Do not use in those areas where the following Endangered Species may be known to have dens: red wolf, gray wolf, and San Joaquin kit fox.

GAS CARTRIDGE FOR COYOTES

For control of coyotes (Canis latrans) in dens only.

NOT FOR SALE TO PERSONS UNDER
16 YEARS OLD

ACTIVE INGREDIENTS:	
Sodium Nitrate	65.0%
Charcoal	35.0%
TOTAL	100.0%

KEEP OUT OF REACH OF CHILDREN

WARNING

STATEMENT OF PRACTICAL TREATMENT

CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY!

If inhaled and person has poisoning symptoms (headache, nausea, dizziness, weakness), transfer victim to fresh air. Have victim lie down and keep warm. If respiration is adequate, recovery will be rapid. If breathing has stopped, use artificial respiration. If available, pure oxygen should be given.

SEE LEFT SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
ANIMAL DAMAGE CONTROL
Hyattsville, MD 20782
EPA Est. No. 56228-ID-1
EPA Reg. No. 56228-21

Net Weight 240 grams

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store in cool, dry place away from fire, heat and direct sunlight.

PESTICIDE DISPOSAL: To dispose of unused cartridges, soak in water, crush and bury at least 6" in loose soil.

CONTAINER DISPOSAL: Place in trash collection.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

USE RESTRICTIONS

For control of coyotes *(Canis latrans)* in dens only on rangelands, and crop and non-crop areas. Do not use near flammable material or inside buildings.

APPLICATION DIRECTIONS

First select den for treatment. Make sure cartridge will pass easily into opening and obtain material to plug the entrance. Then, with a nail at least 1/8" in diameter, puncture cap at end of cartridge at points marked. Insert fuse in one of center holes. Insure there is a minimum of 3 inches of exposed fuse. Hold cartridge away from face and body, then light.

NOTE: The minimum burn time for these fuses is 5 seconds.

Place cartridge, fuse-end first, as far into the entrance as possible. Close entrance to burrow immediately. (If burrow is steep, contents of cartridge may flow out of lighted end. If so, place cartridge as deep in burrow as possible with fuse-end up, light, and close burrow.

6/89

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

Harmful if swallowed, inhaled, or absorbed through the skin. Avoid contact with eyes, skin, or clothing. Handle only with protective gloves, clothing, and face mask, or respirator. Wash hands with soap and water after handling.

ENVIRONMENTAL HAZARDS

This product is toxic to birds. Do not expose in areas accessible to waterfowl, poultry, and other non-target birds. Keep out of lakes, ponds, streams, tidal marshes, and estuaries. Do not apply where runoff is likely to occur. Do not contaminate water by the cleaning of equipment or disposal of waste.

ENDANGERED SPECIES CONSIDERATIONS

Before undertaking any control operations with the product, consult with local, State, and Federal wildlife authorities to ensure the use of this product presents no hazard to any endangered species.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

GENERAL INFORMATION: Compound DRC-1339 Concentrate is a slow acting avicide for the control of blackbirds, cowbirds, grackles, and starlings. Birds ingesting treated bait(s) die within one to three days.

USE RESTRICTIONS

Application of treated bait(s) in any problem area should be made only after careful observation of bird feeding habits to locate preferred feeding sites, determine the optimum time of application, and evaluate hazards of the application to desirable or protected animals. DO NOT apply bait(s) in areas where there is danger of consumption by endangered species. Prebaiting may be necessary to obtain successful results. When baiting is completed, remove all unconsumed bait material and dispose of in accordance with applicable state or federal laws. Carcasses of dead or dying birds that are found should be collected and either burned or buried according to applicable laws.

NOTE: WHEN CONTROLLING BLACKBIRDS, COWBIRDS, AND GRACKLES, IT MAY BE NECESSARY TO OBTAIN A KILL-PERMIT FROM THE U.S. FISH AND WILDLIFE SERVICE AND/OR THE APPLICABLE STATE WILDLIFE AGENCY.

RESTRICTED USE PESTICIDE

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicators certification.

For use only by U.S. Department of Agriculture personnel trained in bird control or persons under their direct supervision.

COMPOUND DRC-1339
98% CONCENTRATE

ACTIVE INGREDIENT:
3-Chloro-p-toluidine hydrochloride 98.0%
INERT INGREDIENTS: 2.0%
TOTAL 100.0%

KEEP OUT OF REACH OF CHILDREN

DANGER—POISON

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY!

IF SWALLOWED: Induce vomiting and immediately call a physician.

IF INHALED: Move patient from contaminated area and immediately call a physician.

IF ON SKIN OR IN EYES: Immediately flush eyes or skin with large quantities of water. Call a physician immediately.

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
ANIMAL DAMAGE CONTROL
Hyattsville, MD 20782
EPA Est. No. 56228-ID-1
EPA Reg. No. 56228-10

Net Weight

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

STORAGE: Store only in original container, in a dry place inaccessible to children, pets and domestic animals.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spilled bait, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Completely empty by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment, then dispose of bags in a sanitary landfill or by incineration if allowed by State and local authorities. If burned, stay out of smoke.

DIRECTIONS FOR USE *(Cont.)*

Brewers blackbird (*Euphagus cyanocephalus*)
Brownheaded cowbird (*Molothrus ater*)
Common grackle (*Quiscalus quiscula*)
Great-tailed grackle (*Cassidix mexicanus*)
Red-winged blackbird (*Agelaius phoeniceus*)
Starling (*Sturnus vulgaris*)

FOR CONTROL IN FEEDLOTS

FORMULATION DIRECTIONS: Dissolve 46 grams (1.6 oz) of Compound DRC-1339 Concentrate in 600 ml (1.3 pt) of warm potable water or edible oil (the amount can be adjusted according to the bait material used to obtain uniform coverage). Pour the solution over 4.5 kg (10 lbs) of bait material and mix or tumble slowly until mixture appears evenly distributed and dry. Bait may consist of poultry pellets, rice, corn, or milo. Do not use bait materials that have less than 2500 particles/lb or more than 25,000 particles/lb.

Dilute treated baits with 5 to 10 parts of similar, untreated bait. Baits prepared in this manner should reduce the possibility of target birds consuming more than one lethal bait and should allow more birds an opportunity to consume a lethal bait.

APPLICATION IN BEEF CATTLE FEEDLOTS: Place by hand in feeding stations or scatter by hand diluted bait thinly and uniformly at a rate of 2.5kg/100m^2 (1lb/1000ft^2) over dry or frozen areas in pens and alleyways before target birds arrive in the morning. Pens occupied by beef cattle are particularly attractive to feeding birds.

APPLICATION IN POULTRY AND SWINE FEEDLOTS: Place in feeding stations or hand scatter baits thinly and uniformly over dry or frozen areas at a rate of 2.5kg/100m^2 (1lb/1000ft^2) on the PERIMETER of the lot OUTSIDE the pen areas occupied by poultry and swine. Do not bait occupied pens.

10/89

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

Sodium Cyanide may be fatal if swallowed or inhaled. Use only with adequate ventilation and do not breathe the gas or dust. When handling, setting out or checking M-44 cyanide capsules, always have at least six pearls of Amyl-Nitrite readily available in case sodium cyanide is swallowed or inhaled.

While handling sodium cyanide capsules, protect hands with gloves and shield eyes to prevent eye burns and skin irritation. Wash thoroughly before eating or smoking.

Do not use in areas frequented by humans or domestic dogs.

ENVIRONMENTAL HAZARDS

This pesticide is TOXIC TO WILDLIFE. Keep out of lakes, ponds or streams. Do not contaminate water by cleaning of equipment or disposal of wastes. The M-44 ejector device cannot be used in areas inhabitated by endangered canids and felids.

CHEMICAL HAZARDS

Contact with acid liberates poisonous and flammable hydrogen cyanide gas.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

For use in specific situations to reduce canids (coyotes, red fox, gray fox and wild dogs) that depredate livestock and poultry or federally designated threatened or endangered species. For use on pastures, range land and forest land only. Do not place in areas where food crops are planted.

IMPORTANT - Before handling or placing M-44 cyanide capsules or M-44 ejector devices, consult the Use Restriction Bulletin for specific use directions, additional precautions, information on endangered species, warning signs and antidotal measures.

WARNING SIGNS
Bilingual (Spanish/English) warning signs must be posted in the general area and at the application site.

RESTRICTED USE PESTICIDE

For retail sale to and use only by certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicators certification.

M-44 CYANIDE CAPSULES

For use in the M-44 ejector device to control coyotes (Canis latrans), red fox (Vulpes vulpes), gray fox (Urocyon cinereoargenteus) and wild dogs that depredate livestock and poultry or federally designated threatened or endangered species.

ACTIVE INGREDIENT:	
Sodium Cyanide	**88.62%**
INERT INGREDIENTS:	**11.38%**
TOTAL :	**100.00%**

50 Capsules Net Weight 45.5 grams

KEEP OUT OF REACH OF CHILDREN

DANGER—POISON

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY!

IF SWALLOWED OR INHALED - Prompt treatment is of the utmost importance. Carry patient to fresh air, have him lie down. Patient should breathe the contents of an Amyl Nitrite pearl 15-30 seconds each minute if necessary, until five pearls have been used. Use artificial respiration if breathing has stopped. Remove contaminated clothing, but keep patient warm. CALL A PHYSICIAN IMMEDIATELY.

IF ON SKIN - Immediately flush with plenty of water.

IF IN EYES - Immediately flush with plenty of water and call a physician.

SEE LEFT SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
NATIONAL TECHNICAL SUPPORT STAFF/ADC
Hyattsville, MD 20782
EPA Est. No. 56228-ID-1
EPA Reg. No. 56228-15

STORAGE AND DISPOSAL

STORAGE: Store M-44 cyanide capsules under lock and key in a dry place away from food, domestic animals and acids. Do not contaminate feed or food stuffs.

DISPOSAL: Dispose of defective and used M-44 capsules by burial in a safe location in the field or at a proper land fill site.

Q Appendix

M-44 Cyanide Capsules
M-44 Use Restrictions
EPA Registration No. 56228-15

1. Use of the M-44 device shall conform to all applicable Federal, State, and local laws and regulations.

2. Applicators shall be subject to such other regulations and restrictions as may be prescribed from time-to-time by the U.S. Environmental Protection Agency (EPA).

3. Each applicator of the M-44 device shall be trained in: (1) safe handling of the capsules and device, (2) proper use of the antidote kit, (3) proper placement of the device, and (4) necessary recordkeeping.

4. M-44 devices and sodium cyanide capsules shall not be sold or transferred to, or entrusted to the care of any person not supervised or monitored, by the Animal and Plant Health Inspection Service (APHIS), Animal Damage Control (ADC) program or any agency not working under an ADC cooperative agreement.

5. The M-44 device shall only be used to take wild canids suspected of preying on livestock, poultry or federally designated threatened or endangered species.

6. The M-44 device shall not be used solely to take animals for the value of their fur.

7. The M-44 device shall only be used on or within 7 miles of a ranch unit or allotment where losses due to predation by wild canids are occurring or where losses can be reasonably expected to occur based upon recurrent prior experience of predation on the ranch unit or allotment. Full documentation of livestock depredation, including evidence that such losses were caused by wild canids, will be required before applications of the M-44 is undertaken.

8. The M-44 device shall not be used: (1) In areas within national forests or other Federal lands set aside for recreational use, (2) areas where exposure to the public and family and pets is probable, (3) in prairie dog towns, or, (4) except for the protection of federally designated threatened or endangered species, in National and State Parks; National or State Monuments; federally designated wilderness areas; and wildlife refuge areas.

9. The M-44 device shall not be used in areas where federally listed threatened or endangered animal species might be adversely affected. Each applicator shall be issued a map, prepared by or in consultation with the U.S. Fish and Wildlife Service, which clearly indicates such areas.

10. One person other than the individual applicator shall have knowledge of the exact placement location of all M-44 devices in the field.

M-44 Cyanide Capsules
M-44 Use Restrictions
EPA Registration No. 56228-15

11. In areas where more than one governmental agency is authorized to place M-44 devices, the agencies shall exchange placement information and other relevant facts to ensure that the maximum number of M-44′s allowed is not exceeded.

12. The M-44 device shall not be placed within 200 feet of any lake, stream, or other body of water, provided that natural depression areas which catch and hold rainfall only for short periods of time shall not be considered "bodies of water" for purposes of this restriction.

13. The M-44 device shall not be placed in areas where food crops are planted.

14. The M-44 device shall be placed at least at a 50-foot distance or at such a greater distance from any public road or pathway as may be necessary to remove it from the sight of persons and domestic animals using any such public road or pathway.

15. The maximum density of M-44′s placed in any 100 acre pastureland area shall not exceed 10; and the density in any 1 square mile of open range shall not exceed 12.

16. No M-44 device shall be placed within 30 feet of a livestock carcass used as a draw station. No more than four M-44 devices shall be placed per draw station and no more than five draw stations shall be operated per square mile.

17. Supervisors of applicators shall check the records, warning signs, and M-44 devices of each applicator at least once a year to verify that all applicable laws, regulations, and restrictions are being strictly followed.

18. Each M-44 device shall be inspected by the applicator at least once every week, weather permitting access, to check for interference or unusual conditions and shall be serviced as required.

19. Damaged or nonfunctional M-44 devices shall be removed from the field.

20. An M-44 device shall be removed from an area if, after 30 days, there is no sign that a target predator has visited the site.

21. All persons authorized to possess and use sodium cyanide capsules and M-44 devices shall store such capsules and devices under lock and key.

22. Used sodium cyanide capsules shall be disposed of by deep burial or at a proper landfill site.

M-44 Cyanide Capsules
M-44 Use Restrictions
EPA Registration No. 56228-15

23. Bilingual warning signs in English and Spanish shall be used in all areas containing M-44 devices. All such signs shall be removed when M-44 devices are removed.

a. Main entrances or commonly used access points to areas in which M-44 devices are set shall be posted with warning signs to alert the public to the toxic nature of the cyanide and to the danger to pets. Signs shall be inspected weekly to ensure their continued presence and ensure that they are conspicuous and legible.

b. An elevated sign shall be placed within 25 feet of each individual M-44 device warning persons not to handle the device.

24. Each authorized or licensed applicator shall carry an antidote kit on his person when placing and/or inspecting M-44 devices. The kit shall contain at least six pearls of amyl nitrite and instructions on their use. Each authorized or licensed applicator shall also carry on his person instructions for obtaining medical assistance in the event of accidental exposure to sodium cyanide.

25. In all areas where the use of the M-44 device is anticipated, local medical people shall be notified of the intended use. This notification may be through a poison control center, local medical society, the public health service, or directly to a doctor or hospital. They shall be advised of the antidotal and first-aid measures required for treatment of cyanide poisoning. It shall be the responsibility of the supervisor to perform this function.

26. Each authorized M-44 applicator shall keep records dealing with the placement of the device and the results of each placement. Such records shall include, but need not be limited to:

a. The number of devices placed.

b. The location of each device placed.

c. The date of each placement, as well as the date of each inspection.

d. The number and location of devices which have been discharged and the apparent reason for each discharge.

e. Species of animals taken.

f. All accidents or injuries to humans or domestic animals.

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Animal Damage Control
National Technical Support Staff
Hyattsville, MD 20782
May 13, 1988

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

May be fatal if swallowed. Wear waterproof gloves when handling collars. Wash hands after handling collars or animals that have been contaminated with 1080 solution. Do not use contaminated animals for food or feed.

ENVIRONMENTAL HAZARDS

This pesticide is very highly toxic to wildlife. Birds and mammals feeding on carcasses of contaminated livestock may be killed. Keep out of any body of water. Apply this product only as specified on this label.

ENDANGERED SPECIES CONSIDERATIONS

NOTICE: It is a Federal offense to use any pesticide in a manner that results in the death of a member of an endangered species.
The use of 1080 in the Livestock Protection Collar has been determined to pose a hazard to several endangered species. See technical bulletin (use restriction No. 15) for specific areas where the 1080 collar cannot be used or approval must be obtained from the U.S. Fish and Wildlife Service prior to use.

NOTE TO PHYSICIAN

WARNING SYMPTOMS: 1080 poisoning results from the transformation of fluoroacetate into fluorocitrate within cell mitochondria. Poisoning is characterized by a symptom-free latent period of 1/2 to 2 hours or longer between ingestion and onset of symptoms (nausea, vomiting, diarrhea, and hyperactive behavior leading to convulsions, coma, and cyanosis). Ventricular fibrillation is commonly noted and is the primary cause of death. Early symptoms include alteration of heart sounds and premature, weak contractions.

TREATMENT: No effective antidote is known but symptomatic treatment may be effective. Establish respiration; create artificial airway if necessary. Check adequacy of tidal volume. Initiate emesis. If patient is comatose, convulsing, or has lost the gag reflex, endotracheal intubation should precede gastric lavage with large bore tube. Administer activated charcoal and magnesium sulfate. Treat seizures with IV diazepam. Monitor cardiac function closely. Treatment with glyceryl monoacetate (monoacetin) may be effective; however, it is experimental and unproven in humans. CONSULT NEAREST POISON CONTROL CENTER FOR CURRENT INFORMATION. Symptoms of non-lethal intoxication will usually subside within 12-24 hours.

RESTRICTED USE PESTICIDE

Collars shall be sold or transferred only by registrants or their agents and only to certified Livestock Protection Collar applicators. Collars may be used only by specifically certified Livestock Protection Collar applicators or by persons under their direct supervision.

SODIUM FLUOROACETATE
(COMPOUND 1080)
LIVESTOCK PROTECTION COLLAR

For use on sheep or goats to kill depredating coyotes

ACTIVE INGREDIENT:	
Sodium fluoroacetate	1.00%
INERT INGREDIENTS:	99.00%
TOTAL	100.00%

KEEP OUT OF REACH OF CHILDREN

DANGER—POISON

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY!

IF SWALLOWED: Induce vomiting at once with an emetic such as syrup of ipecac: use as directed. If emetic is not available, drink 1-2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. PROMPT TREATMENT IS MANDATORY. GET MEDICAL ATTENTION IMMEDIATELY.
IF ON SKIN - Wash the exposed area twice with soap and water.
IF IN EYES - Wash eyes with plenty of water for at least 15 minutes.
IF ON CLOTHING - Remove contaminated clothing and wash before re-use. Dispose of all contaminated leather, including shoes, boots, and gloves; according to the pesticide Disposal Section. See disposal instruction on side panel.

SEE LEFT SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

MANUFACTURED BY:	UNITED STATES DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE Hyattsville, MD 20782
U.S. PAT. 3,842,806	EPA Est. No. 56228-ID-1 EPA Reg. No. 56228-22
NET CONTENTS:	30.4 grams (1.1 oz.) per small collar

NOTICE

Seller makes no warranty, expressed or implied, concerning the use of this product other than that indicated on the label. Buyer assumes all risk of use and/or handling of this material when such use and/or handling is contrary to label instructions.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store Livestock Protection Collars only in original container, in a dry, locked place away from food, feed, domestic animals and corrosive chemicals. Do not store in any structure occupied by humans.

When snow or frozen ground make on site disposal impractical, up to one cubic foot of wastes may be stored in a leakproof container, in a dry locked place for up to 90 days.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of such materials is a violation of Federal Law.

Dispose of collars and other wastes contaminated by 1080 (carcasses, wool, hair, vegetation, soil, leather clothing, and water) under three feet of soil, at a safe location, preferably on property owned and managed by the applicator and at least one half mile from human habitations and water supplies.

Incineration may be used instead of burial for disposal in the field *(preferably on property owned or managed by the applicator)* at least 1/2 mile from human habitation and water supplies. Place collars and wastes *(listed above)* in an incinerator or refuse hole, saturate with diesel fuel, and ignite. Attend the burn until the contaminated material is completely consumed.

Alternatively, contact your state pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in disposing of wastes at approved hazardous waste disposal facilities.

CONTAINER DISPOSAL:

Metal Containers: Triple rinse contaminated and uncontaminated containers with water. Then puncture and dispose of contaminated containers and rinsate as above.
Plastic Containers: Triple rinse with water. Then puncture and dispose of container and rinsate as above.
COLLAR DISPOSAL: Dispose of punctured or unserviceable collars as above, except that not more than 10 collars may be buried in any one hole. If buried in trench, groups of 10 collars must be at least 10 feet apart.

56228-22

SEE BACK PANEL AND TECHNICAL BULLETIN FOR DIRECTIONS FOR USE.

6/91

ACCEPTED
SEP 30 1991
Under the Federal Insecticide, [illegible] and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No.

DIRECTIONS FOR USE

It is a violation of State and Federal Law to use this product in a manner inconsistent with its labeling or the Compound 1080 cancellation order. Misuse may result in civil or criminal enforcement action.

DO NOT REMOVE TOXICANT FROM COLLARS. DO NOT USE TORN, DAMAGED OR LEAKING COLLARS. Dispose of damaged collars in accordance with the "Storage and Disposal" instructions on this label.

Put collars on the necks of sheep or goats in fenced pastures where coyote predation is occurring or is expected to occur. Use collars only in accordance with the User Instructions and Use Restrictions contained in the accompanying Technical Bulletin.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

May be fatal if swallowed. Wear waterproof gloves when handling 1080. Wash hands after handling 1080 or animals that have been contaminated with 1080. Do not use contaminated animals for food or feed.

ENVIRONMENTAL HAZARDS

This pesticide is very highly toxic to wildlife. Birds and mammals feeding on carcasses of contaminated livestock may be killed. Keep out of any body of water. Apply this product only as specified on this label.

ENDANGERED SPECIES CONSIDERATIONS

NOTICE: It is a Federal offense to use any pesticide in a manner that results in the death of a member of an endangered species.

NOTE TO PHYSICIAN

WARNING SYMPTOMS: 1080 poisoning results from the transformation of fluoroacetate into fluorocitrate within cell mitochondria. Poisoning is characterized by a symptom-free latent period of 1/2 to 2 hours or longer between ingestion and onset of symptoms (nausea, vomiting, diarrhea, and hyperactive behavior leading to convulsions, coma, and cyanosis). Ventricular fibrillation is commonly noted and is the primary cause of death. Early symptoms include alteration of heart sounds and premature, weak contractions.

TREATMENT: No effective antidote is known but symptomatic treatment may be effective. Establish respiration; create artificial airway if necessary. Check adequacy of tidal volume. Initiate emesis. If patient is comatose, convulsing, or has lost the gag reflex, endotracheal intubation should precede gastric lavage with large bore tube. Administer activated charcoal and magnesium sulfate. Treat seizures with IV diazepam. Monitor cardiac function closely. Treatment with glyceryl monoacetate (monoacetin) may be effective; however, it is experimental and unproven in humans. CONSULT NEAREST POISON CONTROL CENTER FOR CURRENT INFORMATION. Symptoms of non-lethal intoxication will usually subside within 12-24 hours.

COMPOUND 1080 (LPC)

Manufacturing-Use Product

For use only for reformulation into Sodium Fluoroacetate solutions for use only in Federally-Registered Livestock Protection collars

ACTIVE INGREDIENT:

Sodium fluoroacetate	90.0%
INERT INGREDIENTS:	10.0%
TOTAL	100.0%

KEEP OUT OF REACH OF CHILDREN

DANGER—POISON

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY!

IF SWALLOWED: Induce vomiting at once with an emetic such as syrup of ipecac: use as directed. If emetic is not available, drink 1-2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. PROMPT TREATMENT IS MANDATORY. GET MEDICAL ATTENTION IMMEDIATELY.

IF ON SKIN - Wash the exposed area twice with soap and water.

IF IN EYES - Wash eyes with plenty of water for at least 15 minutes.

IF ON CLOTHING - Remove contaminated clothing and wash before re-use. Dispose of all contaminated leather, including shoes, boots, and gloves; according to the pesticide Disposal Section. See disposal instruction on side panel.

SEE LEFT SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
ANIMAL DAMAGE CONTROL
Hyattsville, MD 20782
EPA Est. No. 5217-AL-1
EPA Reg. No. 56228-26

Net Weight: 8 ounces

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store Compound 1080 only in original container, in a dry, locked place away from food, feed, domestic animals and corrosive chemicals.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of such materials is a violation of Federal Law.

Dispose of unsafe containers or other wastes contaminated by Compound 1080 under three feet of soil, at a safe location, at least one-half mile from human habitations and water supplies.

Alternatively, contact your state pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in disposing of wastes at approved hazardous waste disposal facilities.

CONTAINER DISPOSAL: Triple rinse contaminated and uncontaminated containers with water. Then puncture and dispose of contaminated containers and rinsate as above.

DIRECTIONS FOR USE

It is a violation of State and Federal Law to use this product in a manner inconsistent with its labeling or the Compound 1080 cancellation order. Misuse may result in civil or criminal enforcement action.

This product may only be used to prepare Sodium Fluoroacetate solutions for injection into toxicant reservoirs of Federally-registered Livestock Protection Collars.

ACCEPTED
5/28/91
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 56228-26

11/90

ATTACHMENT 7

ESTIMATED COYOTE DENSITIES
IN THE
WESTERN UNITED STATES

Estimated coyote densities (coyotes/sq mi) based on a variety of estimation methods

Investigator	Location	Method	Area (mi²)	Coyote estimates Total no.	Coyote estimates Density	Remarks
Knowlton 1972	Western U.S.	educated guess	—	—	0.5-1.0	
Wolfe 1974	Colorado (northeast)	elicited howling	400	—	0.1-0.18	breeding and postwhelping
Wolfe 1974	Colorado (northeast)	aerial count	400	—	0.18	August
Davison (pers. commun.)	Idaho (Butte Co.)	Lincoln index	550	390	0.7	isotope tagged feces
Mathwig 1973	Iowa (Monona Co.)	bounty records	—	—	0.3-0.7	breeding population
Gier 1957	Kansas (statewide)	educated guess	—	—	1.5	breeding population
Gier 1957	Kansas (statewide)	educated guess	—	—	2.0	postwhelping population
Gier 1975	Kansas (cental)	not specified	4.6	26	5.7	unusual case
Henderson et al. 1977	Kansas (statewide)	educated guess	—	—	1.0	normal
Henderson et al. 1977	Kansas (statewide)	educated guess	—	—	5-6	ideal conditions
Ozoga and Harger 1966	Michigan (Beaver I.)	home-range calc.	55	—	0.5	island in Lake Michigan
Ozoga and Harger 1966	Michigan (northern)	home-range calc.	70	—	0.25	mainland
Bennitt 1948	Missouri (statewide)	bounty records	—	—	0.07-0.56	various regions
Alcorn 1972	Nevada (statewide)	elicited howling	—	—	0.9-1.1	
Beasom 1973	Texas (south)	total kill	9	129	6.5-14.3	winter-spring
Young and Jackson 1951	Texas (Maverick Co.)	total kill	375	611	1.6	October 1946
Young and Jackson 1951	Texas (Maverick Co.)	total kill	256	340	1.3	January 1947
Young and Jackson 1951	Texas (McMullen Co.)	total kill	5	56	11.2	5 days in April 1947
Knowlton 1972	Texas (south)	educated guess	—	—	4-6	fall population
Knudsen 1976	Utah (Curlew Valley)	Lincoln index	700	1061	1.5	tagged pups, 1972
Knudsen 1976	Utah (Curlew Valley)	Lincoln index	700	155	0.2	tagged pups, 1973
Knudsen 1976	Utah (Curlew Valley)	Lincoln index	700	350	0.5	tagged pups, 1974
Clark 1972	Utah (Curlew Valley)	Lincoln index	700	—	0.3-0.7	tagged pups, 1966-70
Nellis and Keith 1976	Alberta (central)	Lincoln index	50-77	—	0.7-1.6	helicopter transects

Information Source:
U.S. Fish and Wildlife Service. 1978. Predator Damage in the West:
A Study of Coyote Management Alternatives. U.S. Department of Interior,
Washington D.C. 168 pp.

ATTACHMENT 8

INFORMAL CONSULTATION

ON ANNUAL WORK PLAN FOR ANIMAL DAMAGE CONTROL ON BUREAU OF LAND MANAGEMENT DISTRICTS IN NEVADA

United States Department of the Interior

TAKE PRIDE IN AMERICA

FISH AND WILDLIFE SERVICE
FISH AND WILDLIFE ENHANCEMENT
RENO FIELD OFFICE
4600 Kietzke Lane, Building C-125
Reno, Nevada 89502-5093

RECEIVED
BUREAU OF LAND MANAGEMENT
ELKO DISTRICT OFFICE
JUN 19 [illegible] A.M.

10830

ELKO DISTRICT
DM
RES
ADM
OSS
PA
RA
PEC
Carol
CF
CODE:
X=ACTION

June 12, 1992
File No. 1-5-92-I-239

Gary Simmons, State Director
Animal Damage Control
Department of Agriculture
4600 Kietzke Lane, Bldg. O-260
Reno, Nevada 89502

Dear Mr. Simmons:

Subject: Informal Consultation on Annual Work Plan For Animal Damage Control on Bureau of Land Management Districts in Nevada

We received your June 1, 1992, request for review and concurrence with a "not likely to adversely affect" determination for the proposed annual work plan for fiscal year 1992 on the six Bureau of Land Management Districts (Bureau) in Nevada. Your request for our review was submitted pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act), and was received on June 1, 1992. The federally listed endangered bald eagle (Haliaeetus leucocephalus) occurs within the proposed action areas and to the best of our knowledge, is the only listed species that could be affected by activities identified in the annual work plan. This consultation has been assigned File Number 1-5-92-I-239. Please refer to this number in any future correspondence on this project.

Animal Damage Control (ADC) has proposed an annual work plan for the six Bureau districts. Each district is divided into zones of different ADC activity ranging from zones with no activity except in emergency situations, to planned control zones. The primary purpose of the control activities is to respond to reports of sheep and cow depredation by wildlife. The primary target species is the coyote (Canis latrans), though other species are controlled by ADC. Nontarget species killed by ADC on Bureau lands in 1991 included kit foxes (Vulpes macrotis), badgers (Taxidea taxus), and bobcats (Lynx rufus) caught in leghold traps or snares. Several nontarget species were also caught and released. Control of predators throughout the districts will be by aerial gunnery, call and shoot, leghold trapping, and denning. Use of M-44 is currently anticipated only in the Ely and Elko Districts. M-44 was used last year in the Ely District and killed six coyotes. Use of M-44 will be in accordance with Environmental Protection Agency regulations and Animal and Plant Health Inspection Service policy. ADC inspects M-44 canisters once per week. Because ADC has an exemption from Nevada State Law, leghold traps will only be checked once per week, instead of at least every 4 days. Primary control effects will occur in the early spring and summer when lambs and calves are present.

Bald eagle wintering areas and possible nesting sites are within some of the primary control zones. However, placement of bait at least 30 feet away from a leghold trap, in accordance with ADC Federal Policy and Nevada State Law, should reduce the likelihood of injury or death to bald eagles. Due to generally sparse wintering eagle populations, no documentation of any nesting in the State of Nevada since 1866, and identified procedure to minimize the likelihood of injury or death to bald eagles, the Fish and Wildlife Service (Service) concurs with ADC's determination that the proposed fiscal year 1992 annual work plan activities are not likely to adversely affect any listed species. Formal consultation is therefore not required. Should a bald eagle be injured or killed by ADC activities, however, those activities near bald eagle sites should immediately cease, and ADC should immediately enter into formal section 7 consultation with the Service.

This response constitutes informal consultation under regulations promulgated in 50 CFR Part 402, which establish procedures governing interagency consultation under section 7 of the Act. If the proposed project is changed, or if new biological information becomes available concerning listed or candidate species which may be affected by this project, your agency should reinitiate consultation.

Should you have any questions or comments on this informal consultation, please contact Mark Maley or Randy McNatt at (702) 784-5227.

Sincerely,

David L. Harlow
Field Supervisor

cc:
State Director, Bureau of Land Management, Reno, Nevada
District Managers, Bureau of Land Management: Las Vegas, Elko, Battle Mountain, Carson City, Ely and Winnemucca, Nevada
State Director, Nevada Department of Wildlife, Reno, Nevada
Assistant Regional Director, Fish and Wildlife Enhancement, Fish and Wildlife Service, Portland, Oregon (AFWE-EHC) Attn: Richard Hill

ATTACHMENT 9

ADC DIRECTIVE 2.101

WILDLIFE DAMAGE CONTROL OPTIONS

United States Department of Agriculture
Animal and Plant Health Inspection Service

ADC Directive

2.101 3/26/93

WILDLIFE DAMAGE CONTROL OPTIONS

1. PURPOSE

To provide guidelines used for basic decision-making, selection of control options, and program direction.

2. REPLACEMENT HIGHLIGHTS

This directive replaces ADC Directive 2.101 dated 12/18/92.

3. BACKGROUND

Wildlife damage management is practiced as a field of specialization within the wildlife management profession. ADC activities are developed, conducted, and supervised by professionals who are knowledgeable in the biological, ecological, economic, and social principles that govern wildlife management decisions. The ADC program maintains firm supervision of program activities at all levels. Periodic field inspections help to ensure program compliance with applicable laws, regulations, and policies.

4. POLICY

Responding to requests for assistance, ADC may provide technical assistance, direct control assistance, or both. Technical and direct control assistance may involve the use of either lethal or nonlethal control methods. Damage control strategies can be either preventive (applied before damage begins) or corrective (applied when damage is in progress). The decision process used to formulate ADC program responses to requests for assistance is shown in ADC Directive 2.201, ADC Decision Model.

a. Technical Assistance. Technical assistance is defined as advice, recommendations, information, equipment, literature, instructions, and materials provided for others to use in managing wildlife damage problems and understanding wildlife damage management principles and techniques.

b. Direct Control Assistance. Direct control assistance is defined as the field activities conducted or supervised by ADC personnel.

(1) Direct control assistance may be implemented when it has been determined that the problem cannot reasonably be resolved by technical assistance and that the professional skills of ADC

employees are required for effective problem resolution. Direct control assistance is often initiated when the wildlife damage involves several ownerships, sensitive species, application of ADC restriction-specific pesticides, or complex control problems requiring the direct supervision of a professional wildlife manager or biologist.

(2) Direct control operations will be conducted upon request only with the written authorization of the landowner, cooperator, or other authorized officials.

5. SELECTION OF CONTROL TECHNIQUES

The ADC program applies the Integrated Wildlife Damage Management (IWDM) approach to reduce wildlife damage. In selecting damage control techniques for specific wildlife damage situations, consideration must be given to the species responsible and the frequency, extent, and magnitude of damage. In addition to damage confirmation and assessment, consideration must be given to the status of target and potential nontarget species, local environmental conditions, relative costs of applying control techniques, environmental impacts, and social and legal concerns. These factors must be evaluated in formulating control strategies and may include the application of one or more techniques.

6. REFERENCE

ADC Directive 2.105, The ADC Integrated Wildlife Damage Management Program (3/26/93)
ADC Directive 2.201, ADC Decision Model (3/26/93)

Bobby R. Acord
Deputy Administrator

ATTACHMENT 10

ADC DIRECTIVE 2.105

THE ADC
INTEGRATED WILDLIFE DAMAGE MANAGEMENT PROGRAM

United States Department of Agriculture
Animal and Plant Health Inspection Service

ADC Directive

2.105 3/26/93

THE ADC INTEGRATED WILDLIFE DAMAGE MANAGEMENT PROGRAM

1. PURPOSE

To summarize the Integrated Wildlife Damage Management (IWDM) concept used by USDA/APHIS/ADC.

2. BACKGROUND

The ADC program applies the IWDM (commonly known as Integrated Pest Management) approach to reduce wildlife damage. As used and recommended by the ADC program, IWDM encompasses the integration and application of all approved methods of prevention and management to reduce wildlife damage. The IWDM approach may incorporate cultural practices, habitat modification, animal behavior management, local population reduction, or a combination of these approaches. The selection of control methods and their application must consider the species causing the damage and the magnitude, geographic extent, duration, frequency, and likelihood of recurring damage. In addition, consideration is given to nontarget species, environmental conditions and impacts, social and legal factors, and relative costs of control options.

3. POLICY

ADC personnel shall apply and use the IWDM approach to efficiently and effectively prevent or reduce damage caused by wildlife. In applying IWDM to wildlife damage control, the ADC program may offer technical assistance, direct control, or a combination of both in response to requests for help with wildlife damage problems.

Bobby R Acord

Deputy Administrator

ATTACHMENT 11

ADC DIRECTIVE 2.450

TRAPS AND TRAPPING DEVICES

United States Department of Agriculture
Animal and Plant Health Inspection Service

ADC Directive 2.450 3/26/93

TRAPS AND TRAPPING DEVICES

1. PURPOSE

To establish guidelines for ADC personnel for using traps and other capture devices in managing wildlife damage.

2. REPLACEMENT HIGHLIGHTS

This Directive replaces ADC Directive 4.095 dated 11/29/90.

3. POLICY

The use of all traps and trapping devices by ADC employees will comply with applicable Federal, State, and local laws and regulations, except where specific exemptions or permits from State or local wildlife management authorities are obtained. All traps and trapping devices are to be checked as frequently as possible and no less frequently than required by State law, unless ADC acquires specific written exemptions from the regulating State agency. All traps used by ADC will be labeled (e.g., Property of U.S. Government, Property of USDA, Property of Texas, etc.) either with an attached tag or stamped directly on the trap. Other trapping devices will be identified as required by State law.

All traps and trapping devices will be set in a manner which minimizes the chances of capturing nontarget species. Nontarget animals captured will be released alive if it is determined that they are physically able to survive. Target animals captured will be dispatched immediately, removed from the capture device, and disposed of properly.

Appropriate warning signs will be posted on main entrances or commonly used access points to areas where foot-hold traps, snares, or conibear traps are in use. Signs will be routinely checked to assure they are present, obvious, and readable. Signs must be removed when equipment is no longer in use.

a. Foot-hold traps and snares Foot-hold traps or snares are not to be set closer than 30 feet from any exposed animal carcass or part thereof, having meat or viscera attached, including remains of animals previously removed from traps or snares that may attract raptors or other nontarget animals. If an animal carcass can be dragged or moved by scavengers to within 30 feet of set foot-hold traps or snares, the carcass should be secured to restrict movement. These restrictions do not apply to animal carcasses used to attract bear or mountain lion to any approved capture devices or to foot-hold traps set for the purpose of live-capturing raptors.

The use of foot-hold traps on land must incorporate pan-tension devices to prevent or reduce the capture of nontarget animals, unless such use would preclude capture of the intended target animals.

Foot-hold traps equivalent to size 3N Victor or larger are limited to types with smooth, rounded offset steel jaws or padded soft-catch type jaws. This restriction does not apply to drowning sets. Foot-hold traps with teeth or spiked jaws are prohibited unless use is authorized in writing by the Director for the purpose of reducing trap injuries to target animals.

If it is necessary to use foot-hold traps or snares under fence lines, reasonable efforts should be taken to obtain the approval of adjacent landowners, and judgment should be used to avoid capture of livestock and other domestic animals.

The use of break-away locks is encouraged when livestock, deer, or other large animals may be exposed to snare sets.

When setting traps and snares, caution should be used so that captured animals will not be conspicuous to the public, particularly along public roads and trails.

Appropriate notification signs must be posted near bear and lion foot snare sets.

Foot-hold traps will not be used to take bear.

b. Pole traps. Foot-hold traps, leg snares, or tangle snares may be set on poles or roosting structures to capture raptors causing damage if such devices are authorized by the applicable depredation permit. Appropriate Federal, State, or local special purpose permits shall be obtained and in the possession of the authorized ADC person when performing the capture function.

Traps should not exceed size No. 1-1/2 for most raptors. This limitation does not preclude the use of larger, modified traps to capture eagles. Trap springs should be modified to produce the lightest jaw closure sufficient to catch and hold the target raptor. Trap jaws should be sufficiently padded to reduce the possibility of injuring the raptor's legs

To reduce unnecessary stress to the captured bird, traps will be checked at least twice daily, but not less than required by permit, and a slide wire, or similar device, shall be used to allow the raptor to rest on the ground.

c. Conibear traps. Conibear type traps equivalent to size 330, or with a jaw spread exceeding 8 inches, are restricted to water sets.

d. Cage traps. In addition to the above requirements, cage traps loaned to cooperators or the public will be labeled as "Loaned equipment" Cooperators and the public will be responsible for replacing lost, damaged, or stolen equipment. For additional information see ADC Directive 4.165, Loaning Equipment.

4. REFERENCES

ADC Directive 4.165, Loaning Equipment (3/26/93)
50 CFR Part 21 - Migratory Bird Permits,
Subpart D - Control of Depredating Birds
50 CFR Part 22 - Eagle Permits

Bobby R. Acord
Deputy Administrator

BLM LIBRARY
RS 150A BLDG. 50
DENVER FEDERAL CENTER
P.O. BOX 25047
DENVER, CO 80225

SK 421 .E45 1995
U. S. Bureau of Land
Management. Elko District.
Finding of no significant
impact and decision record

OFFICE
DATE RETURNED
(Continued on reverse)

BLM LIBRARY
RS 150A BLDG 50
DENVER FEDERAL CENTER
P.O. BOX 25047
DENVER, CO 80225